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CANADA: THE DECISION TO PROCURE NUCLEAR ATTACK SUBMARINES AND ITS SIGNIFICANCE FOR NATO

by

Theodore Guillory

September 1988

Thesis Advisor: David S. Yost

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Canada: The Decision to Procure Nuclear
Attack Submarines and Its Significance for NATO

by

Theodore Guillory
Lieutenant, United States Navy
B.S., University of Houston, 1981

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN NATIONAL SECURITY AFFAIRS

from the

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ABSTRACT

In June 1987 the Canadian government announced plans to procure 10 to 12 nuclear attack submarines (SSNs). The evidence suggests that, for some Canadians, a primary purpose for this submarine program may not be to enhance the security of NATO, but instead to assert Canada's sovereignty, principally against the United States, in the Arctic region. The thesis discusses this decision and its possible implications for the security of North America and NATO. It is argued that the United States must continue to have unimpeded access to the Arctic region to counter the ever increasing threat posed by Soviet nuclear ballistic missile submarines (SSBNs). Finally, the thesis suggests a possible solution to the current sovereignty debate and a potential strategy for employing these SSNs to enhance the security of North America and NATO as a whole.

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LIST OF ABBREVIATIONS

ALCM	Air Launched Cruise Missile
ASW	Antisubmarine Warfare
CASAP	Canadian Submarine Acquisition Project
CAST	Canadian Air-Sea Transportable
CGECON	Government Expenditure in Constant Dollars
COMNAVFORARCTIC	Commander Naval Forces Arctic
CPF	Canadian Patrol Frigate
DSR	Defence Structure Review
CVBG	Multi-purpose Aircraft Carrier Battle Group
ELF	Extremely Low Frequency
GDP	Gross Domestic Product
GIUK	Greenland-Iceland-United Kingdom
GNPCON	Gross National Product in Constant Dollars
ICBM	Intercontinental Ballistic Missile
MARCOM	Maritime Command
MCM	Mine Counter Measures
MECGE	Military Expenditures as a Percent of Government Expenditures
MEGNP	Military Expenditures as a Percent of GNP
MOU	Memorandum of Understanding
NORAD	North American Air Defense Command
NATO	North Atlantic Treaty Organization

NWS	North Warning System
PMO	Project Management Office
RCN	Royal Canadian Navy
RFP	Request For Proposals
SACLANT	Supreme Allied Commander Atlantic
SCLM	Sea Launched Cruise Missile
SLBM	Submarine Launched Ballistic Missile
SLOC	Sea Lines of Communication
SS	Attack Submarine (Conventional Powered)
SSB	Attack Submarine (Conventional Powered) which carries Ballistic Missiles
SSBN	Nuclear Ballistic Missile Submarine
SSN	Nuclear Attack Submarine
TVD	Theater of Military Operations
UNEF	United Nations Emergency Force
UN	United Nations
VLF	Very Low Frequency

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To have climbed from the deck of a U.S. Navy ship to the accomplishment of this educational milestone, writing of a thesis, is indeed a long journey. One does not make a journey of this magnitude without the help of many men along the way. Because a list of those individuals who have helped make this journey possible would be too exhaustive, I would like to thank them collectively by thanking the United States Navy.

I would like to express a special thanks to my thesis advisor Professor David S. Yost and second reader Professor David Winterford, whose commentaries, criticism and demand for excellence were often frustrating and always invaluable.

I. INTRODUCTION

Since its inception, the Canadian navy has followed the path of a roller coaster in its development. From 1910 until most recently, Canadians have historically allowed the world's menacing situations to dictate the course in which their naval development proceeded. The primary reason for the seesaw tendency in Canada's naval development is that Canadians have not chosen to allocate the necessary resources to provide for sustained naval preparedness. As a result, there has been very little consistence during the Royal Canadian Navy's existence.

This inconsistency in the Royal Canadian Navy's preparedness, coupled with the multilateral and bilateral agreements entered into during and after World War II, has had the effect of creating a commitment-capability gap within Canada's foreign policy. Today, not only is Canada's navy incapable of providing for the security of its 44,000 mile coastline, (but depending on the demands of specific military contingencies) it may also be incapable of making any enduring contribution to the Atlantic Alliance.

In June 1987, after almost 40 years of maintaining modest naval capabilities, the Canadian government announced its plans to procure 10 to 12 nuclear attack submarines (SSNs). This announcement was in part predicated upon Canada's decision to strengthen its naval capacity. However, the evidence suggests that for some Canadians a primary purpose for this submarine program may not be to enhance the security of the North Atlantic Treaty Organization (NATO), but instead to assert Canada's sovereignty in the Arctic region, principally against the United States. This renewed emphasis upon sovereignty appears to be a response to the United States'

refusal to recognize the waters of the Arctic archipelago as Canada's inland waters. This nonrecognition and the reported use of these waters by U.S. fast attack submarines has produced a flurry of protests throughout Canada.

There are some questions as to whether Canada can legally claim sovereignty over the region; nevertheless, the sovereignty issue has become a problem in the close U.S.-Canadian defense relationship, which was inaugurated during World War II. Since World War II, Canada and the United States have cooperated on numerous defense-related issues. This close relationship has been based upon their mutual objective of providing for the security of North America. One of the more notable U.S.-Canadian defense cooperation efforts originated in the creation of the North American Air Defense Command (NORAD) in 1958. The two governments agreed to provide jointly for the air security of North America. (The organization was subsequently renamed the North American Aerospace Defense Command.) In view of the United States' and Canada's shared interests and history of close cooperation, it is hard to see how the sovereignty issue could lead to a truly fundamental rift between these two friendly governments.

Since the Soviets first developed the ballistic missile submarine in 1955,[1] the importance of the Arctic region for the security of North America has steadily increased. This region is home to the powerful Soviet Northern Fleet, second in size only to the Pacific Fleet. One of the main strategic problems posed by the Northern Fleet is that its SSBNs, from concealed hiding places under the Arctic ice, possess the capability of striking any point in North

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[1]James J. Tritten, *Soviet Naval Forces and Nuclear Warfare: Weapons, Employment, and Policy* (Boulder: Westview Press, 1986), 199.

America without any warning prior to launch detection. Also, in a conventional war, the Northern Fleet possesses numerous assets that could operate against the important sea lines of communication (SLOCs) between North America and Europe.

In view of the threat posed by Soviet SSBNs and other assets of the Northern Fleet, it is imperative that the U.S. continue to have unimpeded access to the Arctic region.

This thesis discusses Canada's decision to procure SSNs and the possible implications of this decision for the security of North America and NATO. While it is not suggested that 10 to 12 Canadian SSNs could or would be used to physically deny U.S. submarines access to the Arctic archipelago, the Canadian government has stated that during peacetime these submarines would be used to identify foreign submarines entering the region. If a foreign submarine was identified, the Canadian government would then lodge a formal protest with the country in question.[2] As harmless as these proposed actions may appear, they could potentially have a twofold adverse impact upon NATO. First, the proposed Canadian policy could compromise the discreet nature of U.S. submarine operations in the Arctic. Second, it could have a detrimental impact upon Alliance cohesion. In view of these considerations and the ever increasing threat of Soviet nuclear ballistic missile submarines (SSBNs), it is argued that the U.S. must continue to have unhampered access to the Arctic region.

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[2]David R. Francis, "Canada to Join World's Exclusive Nuclear-Sub Club," *The Christian Science Monitor*, 3 June 1987, 10.

Chapter II examines past roles and missions of the Royal Canadian Navy in order to identify some possible answers as to what factors have contributed to the navy's current posture. The proposed naval revitalization plan is so unusual for Canada during peace time that it leads one to speculate about the origins of the plan. Chapter III deals with this issue by looking at Canada's current defense objectives and the role the proposed SSNs will play in accomplishing these objectives. In addition, this chapter explores the origin of the sovereignty dispute between the United States and Canada and reviews other current issues. Chapter IV discusses some of the pertinent issues (e.g., cost and source) surrounding the acquisition of the SSNs. Because one of the stated missions of the proposed submarines is to assert Canada's sovereignty in the Arctic archipelago, Chapter V assesses the significance of this region in terms of the security challenges it poses for North America. An assessment of U.S. and Soviet interests in the Arctic region is undertaken. In view of the apparent conflict between U.S. interests and some of Canada's sovereignty claims, Chapter VI attempts to determine how Canada's prospective SSN assets might be best employed in enhancing the defensive capabilities of North America and NATO,thereby frustrating the Soviets' chances of being the victors in any potential dispute.

II. CANADA AS A NAVAL POWER

A. HISTORICAL ROLE

Although Canada borders three oceans (Atlantic, Pacific, and Arctic), possesses the world's longest coast line (44,000 miles), and relies heavily upon seaborne trade, Canada does not have a long tradition as a naval power. As a matter of fact, the Royal Canadian Navy was not founded until 1910—forty years after confederation. Prior to this time, Canadians felt little or no need to raise a navy. In part, the decision to forgo the development of a navy was the result of Canada's exclusive reliance upon the British Royal Navy (RN), which at the time had unquestioned supremacy of the seas, to provide for their maritime security.[3]

1. Development

Serious consideration for the development of the Canadian Navy did not begin until 1909, when Germany began to intensify its military build-up in Europe. As a result of this German threat, the Canadian leadership began to raise questions about the fate of Canada if Great Britain were to lose its supremacy of the seas. Obviously, the Canadian leadership did not think that the prospects for Canada would be very positive if this were to occur, because it prompted the Parliament to "cordially approve of any necessary expenditure designed to promote the speedy organization of a Canadian naval service

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[3]Joseph Schull, *The Far Distant Ships,* (Annapolis: United States Naval Institute Press, 1988), 3.

in cooperation with and in close relation to the Imperial Navy."[4] As a result of the Parliament's action, a bill was ultimately passed, in 1910, that established the Naval Service, Naval Board, and a Naval College. The following year, the King designated Canada's infant navy the Royal Canadian Navy (RCN).[5]

At the time of the navy's inception, a building program was devised for the construction of five cruisers and six destroyers. In the meanwhile, two RN cruisers were purchased to serve until the new ships could be constructed and pressed into service. However, the building program did not proceed very far before a fierce dispute arose over whether or not British dreadnoughts should be purchased instead of initiating Canada's own building program. The very language of the earlier Parliament's resolution "...in cooperation with and in close relation to the Imperial Navy," served as the underpinning for this dispute. The end result of this embroilment was that the entire procurement program was placed aside. To make matters worse, the two cruisers that were previously obtained from the British were later deactivated. Hence, the Canadian navy remained without ships until the start of World War I and at a total strength of 366 officers and men.[6]

2. Role in World War I

When war finally erupted in Europe in 1914, Canada reactivated the two cruisers previously obtained from Great Britain. The only other assets Canada possessed to join these cruisers in forming its navy were a fleet of

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[4]Ibid., 4.

[5]Ibid.

[6]Ibid., 5.

trawlers and other small craft. Early in the war and without proper authorization, the Premier of British Columbia took it upon himself to purchase two submarines from a shipyard in Seattle. These meager naval assets limited the Royal Canadian Navy's role in World War I to that of performing only coastal minesweeping, coastal antisubmarine warfare (ASW), and coastal patrols along the Canadian coast.

At the height of the war, the RCN's personnel end strength reached six thousand; nevertheless, shortly after the war's end, demobilization occurred, as it did with other allied countries, and the RCN was reduced to three ships and 366 men. This drastic demobilization was predicated upon a growing isolationist attitude, a very low perception of threat to Canada's shores, and a consideration for Canada's growing debt problems.

An isolationist mentality began to pervade Canada during the war. Canada's entry into the war was the result of constitutional arrangements with Great Britain that bound Canada to come to the empire's defense. More than 600,000 Canadians went to war, serving in either the British or Canadian armed forces; and some 60,000 of these men lost their lives.[7] Such a huge loss in a war that Canada had obviously had no control over declaring made some Canadians start to distance themselves from Great Britain and turn their allegiance inward toward Canada as a nation. This new identification was enhanced by the:

> ...masses of young Canadians [who] were exposed to the British in the army [and navy] whose social structure was based on the class consciousness of

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[7]David P. Burke, *The Unification of the Canadian Armed Forces: The Politics Of Defense in the Pearson Administration,* (PH.D. diss., Harvard University, 1975), 54.

> Edwardian England. The experience persuaded a generation of English Canadians that whatever they were, they certainly weren't British.[8]

The Treaty of Versailles codified Canada's isolationist sentiments, for Canada signed this war-ending treaty separately and not as a dominion subject to Great Britain.

With the Central Powers defeated and with many commentators fostering the belief that the war just concluded would rid the world of the need to fight any future wars, the Canadian leadership did not see any potential threat to their country's security. As R.H. Roy points out:

> The United States, fighting with the allies since 1917, was no longer regarded as a potential threat to Canada's sovereignty. With a friendly neighbor to the south, the wide oceans to the west and east, and the frozen tundra to the north, in a world dominated by friends, Canada seemed secure. Under the circumstances why maintain any of the services?[9]

Canada's feeling of security was further reinforced by the trust placed in the League of Nations as an arbitrator of disputes between nations and the non-aggression treaties among the Great Powers. It was believed that "...intelligent men would never permit such a holocaust as 1914-1918 to be repeated."[10]

Aside from the human cost, the war had placed a tremendous financial burden upon Canada, leaving it with many debts. This was another dominant factor contributing to Canada's rapid demobilization.

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[8]Ibid., 55.

[9]Hector J. Massey, *The Canadian Military: A Profile*, (Canada: Copp Clark Publishing Company, 1972.), 37

[10]Ibid., 40

Great Britain, recognizing the precarious situation in which drastic reduction had placed the RCN, gave Canada a cruiser, two destroyers, and two submarines. However, this was to no avail, because by 1922 Canada's continued indifference toward the military in this era of isolationist sentiment (and the general feeling of security) led to the sale of the cruiser and the two submarines. Thus Canada was left with only two destroyers for maritime defense.[11]

During the entire decade of the 1920s, only $2,000,000 was appropriated to the navy.[12] The neglect of the RCN's capabilities continued until 1936, when a sparse building program was finally initiated and several other assets were obtained from the Royal Navy, bringing the total naval force to six destroyers and eight minesweepers. Accompanying this modest RCN hardware build-up, personnel levels were also increased to slightly more than 3,000.[13]

3. Role in World War II

Canada entered World War II on September 10,1939. In contrast with its relatively minor role in World War I, the Canadian navy was to assume a major role in the Second World War. The RCN was assigned primary responsibilities in protecting supply convoys from North America against German U-boat attacks in the Atlantic. For the accomplishment of this mission, the RCN required many more ships than it had on hand at the beginning of the war. Since British shipyards were overwhelmed with the construction of ships

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[11]Schull, *The Far Distant Ships*, 5-7.

[12]Massey, *The Canadian Military: A Profile*, 41.

[13]Schull, *The Far Distant Ships*, 7.

to meet the Royal Navy's needs and U.S. shipyards were not prepared to provide the quantity of ships needed, the Canadians were forced to build shipyards and construct their own naval vessels. As a result, the Canadians began constructing a type of whaling ship later called a Corvette. These were small, fast, and highly maneuverable vessels that proved highly effective in the RCN's escort and ASW missions.[14]

Throughout the war, the Royal Canadian Navy performed its mission admirably. It was engaged in extensive campaigns in the Mediterranean, Arctic, Gulf of St. Lawrence, English Channel, North Sea, and even the Pacific. By 1943, the navy had grown to include approximately 400 warships, making it a formidable naval force. At the close of World War II, the Royal Canadian Navy ranked third in the Western world, behind only the United States and Great Britain.

The RCN's combined wartime efforts accounted for the sinking of 27 German U-boats and the capture or destruction of some 42 enemy surface ships.[15]

B. CANADA'S NAVY IN THE POST WAR ERA

For many of the same reasons that demobilization occurred after World War I, Canada again demobilized its armed forces. Although the reductions were considerable, they were not as drastic as those after the previous war. Its navy, which had consisted of 80,000 members at its peak, was reduced to a force of 10,000. Many of its 400 ships were either scrapped or sold, leaving the

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[14]Ibid., 27.

[15]Ibid., 425-430.

Canadian Navy with only an aircraft carrier, two cruisers, and a few smaller combatants.[16]

This demobilization was probably predicated upon "an overwhelming desire on the part of publics and policy-makers alike to return as quickly as possible to the normalities of peace."[17] Moreover, Prime Minister Mackenzie King, a Liberal, rejected any notion of Canada serving collectively with the Commonwealth in supporting British foreign and defense policy during the post-war period.[18]

D. Stairs describes the general feelings that prevailed throughout Canada following the end of the war.

With the enemy thoroughly dispatched, and with the victorious great powers committed to continuing their wartime co-operation into the post-war period, there appeared initially to be little in the way of "external menace" against which a significant defence capability might have to be maintained.

The principal substantive objectives of foreign policy related primarily to the regeneration of normal patterns of international trade, partly through the reconstruction of war-damaged economies in Europe, and partly through the maintenance of international monetary stability, and neither of these required a military instrument.

So far as the "diplomatic support" functions were concerned, it was clear that such military-based influence as Canada might hope to wield had

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[16]Ibid., 430-31.

[17]Massey, *The Canadian Military: A Profile*, 92.

[18]Burke, *The Unification of the Canadian Armed Forces*, 71.

already been acquired as a result of the Canadian contribution to the conduct of the war, and that of substantial armed forces.[19]

Probably the most significant aim of Canada's defense policy was to maintain continued cooperation with the United States.[20]

The war had substantially damaged the United Kingdom's economy and reduced its military might. The Canadian leadership knew that they could no longer rely upon Great Britain to provide for Canada's security. Therefore, they prudently realigned Canada's defense relationships with the United States, which had emerged by war's end as the leading economic and military power in the world. This new defense partnership was confirmed in a number of bilateral and multilateral defense arrangements immediately following World War II. The partnership in defense had begun with the Ogdensburg agreement, entered into with the U.S. in 1940. In this pact, it was agreed that the two governments would provide for the joint defense of North America during World War II.

With the perception of no external threat, little need of a military for diplomacy, and a friendly relationship with the world's most powerful country, a large military establishment would (it seemed) serve no useful purpose. As a result of this perceived secure situation, military expenditures "by fiscal year 1947-48 had dropped to a mere $195,000,000 from a wartime peak of $2,963,000,000."[21] Thus Canada began its slow descent to a secondary level of strength in a world that had become bipolar.

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[19]D. Stairs cited in Massey, *The Canadian Military: A Profile*, 93.

[20]Burke, *The Unification of the Canadian Armed Forces*, 71.

[21]Massey, *The Canadian Military: A Profile*, 94.

1. Mission

Canada's enthusiasm for collective security continued after the war, when it assumed a decisive role in advocating the creation of the North Atlantic Treaty Organization (NATO).[22] Although its military forces had been drastically reduced, Canada still possessed a substantial military capacity relative to its European NATO allies. But more importantly, because Canada was not subjected directly to the ravages of war, its economic infrastructure was left intact. These two combined factors enabled Canada to exert an unaccustomed influence in the development of NATO. Canada readily assumed the role of a major power in leadership; but, as Byers points out, "By all of the traditional indicators—manpower, equipment, and defense spending...Canada is not, and never has been, a major military power within the Western Alliance."[23] Despite its middle power status, Canada's assertiveness in the formulation of NATO led to its assuming commitments that approach those of a major power.[24]

Similarly, Canada's zeal for collective security was extended to North America in the establishment of the North American Air Defense Command (NORAD), entered into with the United States in 1958.[25] In this agreement,

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[22]Jon B. Mclin, *Canada's Changing Defense Policy, 1957-1963,* (Baltimore: Johns Hopkins Press, 1967), 12-13.

[23]R. B. Byers, *Adelphi Papers 214: Canadian Security and Defense: the Legacy and the Challenges,* (London: The International Institute for Strategic Studies, 1986.), 10.

[24]Ibid.

[25]Willis C. Armstrong, Louise S. Armstrong, and Francis O. Wilcox, *Canada and the United States: Dependence and Divergence,* (New York: University Press of America, 1986), 224.

the two governments subscribed to build a radar network for early warning and to pool their air resources in the defense of North America against Soviet attacks.

As a result of these collective defense agreements and in providing for Canada's own defense, the Canadian Armed forces are charged with four principal responsibilities:

- to contribute to the collective defense of NATO;
- to defend the North American continent in cooperation with the United States;
- to contribute to international peacekeeping;
- to protect and enhance Canada's sovereignty and independence.[26]

2. Ability to Accomplish Mission

In order to meet its primary NATO objectives during a time of crisis, Canada's Maritime Command (MARCOM, the successor to the RCN) is committed to providing the Supreme Allied Commander Atlantic (SACLANT) with 15 frigates/destroyers, 26 Sea King helicopters, three submarines, and 14 Aurora long-range maritime patrol aircraft.[27] These naval assets are earmarked for use in keeping open the sea lines of communication (SLOCs) between North America and Europe. However, given Canada's current force levels (Table 2.1), if MARCOM was called upon to provide these assets, Canada would be left with only eight frigates/destroyers, nine Sea king helicopters, no submarines, and four Aurora long-range maritime patrol aircraft to patrol its 44,000 mile coastline.

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[26]Byers, *Adelphi Papers 214: Canadian Security and Defense*, 6.

[27]Ibid., 7.

TABLE 2.1. CANADA'S PRESENT MARITIME FORCES[28]

MARITIME FORCES		
Personnel		
Regular	10,000	
Primary Reserve	3,300	
Major Operational Units		
Destroyer Squadrons	4	
Submarines	3	
Maritime Air Squadrons	9 (1 Reserve)	
Principal Equipment	East Coast	West Coast
Frigates / Destroyers	12	8
Reserve Frigates / Destroyers	1	2
Submarines	3	-
Replenishment Ships	2	1
Long Range Patrol Aircraft (Aurora)	14	4
Medium Range Patrol Aircraft (Tracker)	15	3
Helicopters (Sea King)	31	4
Diving Support	1	-
Training Vessels	21	10
Bases in Canada	3	

Moreover, because of their age, many of the assets, if called upon, could only make a limited contribution to SACLANT.[29] For example, the three British-built Oberon-class submarines that Canada currently operates

[28]Byers, Canada, Department of National Defence, *Challenge and Commitment: A Defence Policy for Canada*, (Ottawa: Canadian Government Publishing Center, 1987) 30. This publication is commonly referred to as the White Paper and it will be referred to as such for the remainder of this thesis.

[29]Byers, *Adelphi Papers 214: Canadian Security and Defense*, 7.

were purchased during the 1960s. During the 1990s, each of these submarines will attain the age of 30. Moreover, because of technological advances, these submarines have become obsolete in such rudimentary features as their underwater speeds, snorkeling requirements, diving depths, noise signatures and sensor capabilities. Furthermore, they are incapable of operating under the Arctic ice, an area that has recently become a central preoccupation of Canada's defense community. These combined shortcomings of the Oberons could make them inadequate should the need arise for their service.[30]

As far as the second principal responsibility is concerned, Canada and the United States have entered into some 200 bilateral agreements for the defense of North America, the most notable of which is NORAD. Because the perceived threat to North America during the 1970s came from Soviet SLBMs and ICBMs, both the U.S. and Canada somewhat neglected their responsibilities to this air defense organization during that period. However, with the Soviet deployment of advanced long-range Air Launched Cruise Missiles (ALCMs), commitment to this organization has been renewed.[31] In March of 1985, Prime Minister Mulroney and President Reagan met in Quebec City to reaffirm their continued commitment to this organization. In view of the threat posed by Soviet ALCMs, it was later agreed in 1986 to construct the

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[30]Canada. Department of National Defence, *Backgrounder Documentation: Canadian Submarine Acquisition Project*, 1987, 1.

[31]Armstrong, Armstrong, and Wilcox, *Canada and the United States: Dependence and Divergence*, 236.

North Warning System (NWS) to replace the aging Distant Early Warning System (DEW).[32]

But as cooperative as the two governments appear in this joint venture, their relationship has been strained because of Canada's limited contribution. Currently, Canada provides only 10 percent of the cost of NORAD. Canadians have maintained that, since their population is only 10 percent of the total United States' population, Ottawa is contributing its fair share to NORAD. Needless to say, the U.S. does not agree with this contention.[33]

Since 1947, Canada has made a substantial contribution to its third principal defense goal, peacekeeping operations throughout the world. In August 1988, Canadians were among the first forces to arrive for peacekeeping duties in the Persian Gulf; however, those forces had to be transported by the U.S. Air Force. Peacekeeping operations have been considered desirable by many Canadians because of their relatively low cost and high moral appeal.

The fourth principal responsibility of the Canadian armed forces—defending national sovereignty—has been a recurring theme throughout most of Canada's history. Chapter III provides an extensive review of this issue.

Jean Blais, former Minister of National Defense, reached the following conclusions about Canada's military preparedness:

> If a major national crisis were to occur, the Canadian Forces could not make a credible contribution to deterrence; and in the event of hostilities,

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[32]Byers, *Adelphi Papers 214: Canadian Security and Defense*, 8.

[33]Armstrong, Armstrong, and Wilcox, *Canada and the United States: Dependence and Divergence*, 238.

> the Canadian Forces would not be sufficiently manned or equipped to carry out the tasks expected of them in support of the Allied effort and consequently would be overly vulnerable to enemy attack.[34]

A former United States Ambassador to Canada, Paul Robinson, has stated that: "...as it is, Canada is not adequately able to defend the St. Lawrence river, let alone the entire territory of the world's second largest country."[35] These judgements from both within and outside Canada leave little doubt that a "commitment-capability gap" exists within Canada's foreign policy. Thompson has described this phenomenon as follows:

> The commitment-capability gap demonstrated not only the relatively low priority of defense spending in Canada, but the political and symbolic character of its efforts. Some exasperated critics have asked Canada to shift its focus from merely seeking influence at diplomatic council tables to defense for the sake of defense which would redraw Canada's commitments to conform to its capabilities.[36]

Canada's foreign policy efforts have dictated that Canada maintain a strong defensive posture; however, Canada's defense expenditures have not supported the country's foreign policy presumptions.

Canada's historically low levels of defense expenditures have continued to widen the commitment-capability gap. It is obvious that in order to meet military commitments a country must allocate the necessary level of resources for the procurement of vital equipment. Moreover, national security priorities and military commitments should set the direction which military

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[34]Jean Jacques Blais cited in Byers, *Adelphi Papers 214: Canadian Security and Defense*, 11.

[35]Paul Robinson cited in Wayne C. Thompson, "Canadian Defense Policy," *Current History*, (March 1988) 105.

[36]Ibid., 108.

expenditures should take, and their relationship should be directly proportionate. In other words, as commitments increase, so should capabilities; however, the reverse has occurred in Canada.[37]

According to one estimate, since 1974 Canada's military expenditures, as a percent of total government expenditures (MECGE) have ranged between a low of 7.7 to a high of 8.7 percent of total government expenditures. (See Appendix A.) During this same time frame, total government expenditures in current dollars (CGECUR) have increased more than four-fold. According to another estimate, that portion of government expenditures allocated to military expenditure has actually declined from 12 to 9 percent.[38] In addition, Canada's military expenditures have been further diluted by an average annual 8.5 percent inflation rate.[39] Figure 2.1 depicts this relationship between military expenditures as a percent of total government expenditures (MECGE) and total government expenditures in current dollars (CGECON).

Canada's level of military investment may be placed in perspective with a comparison to other NATO members of a similar economic level. (See Appendix B.) During the period 1967-1983, on the average, the United States spend about 25% of its national budget on defense, United Kingdom 12%, West Germany 11%, and France 9.8%.

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[37]Byers, Adelphi 214: *Canadian Security and Defence*, 31.

[38]Ibid., 87.

[39]*The World Almanac and Book of Facts*, 1986 ed., s.v. "Canada Economic Indicators."

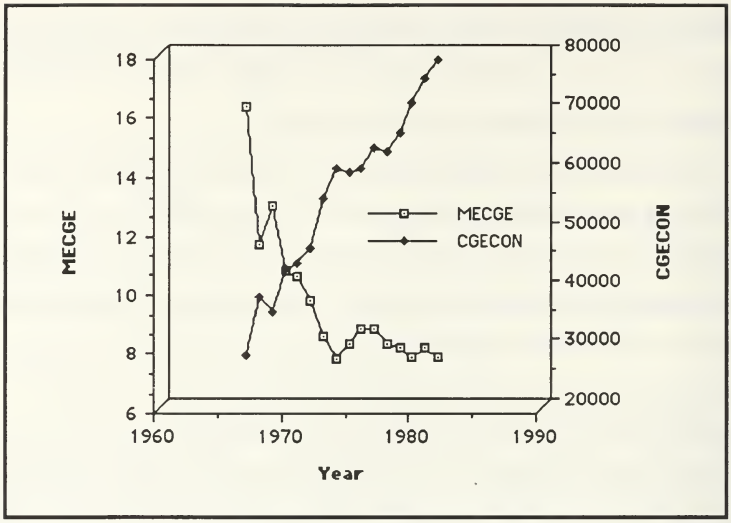

Figure 2.1. The Relationship Between MECGE and CGECON.[40]

Another unfavorable measurement of Canada's military expenditures is the percentage of its gross domestic product allocated to the military. As Figure 2.2 describes, this declining percent of GDP dedicated to defense has resulted in Canada being ranked 14th among the 16 NATO countries in military expenditures, only above tiny Luxembourg and Iceland, and Iceland has no military forces.

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[40]The data used in this chart was extracted from the program 'USACDA WMEAT DATA 1967-1983.' Naval Postgraduate School's IBM 3033/4381. This data was extracted from the United States Arms Control and Disarmament Agency's yearly publication, *World Military Expenditures and Arms Transfers.*

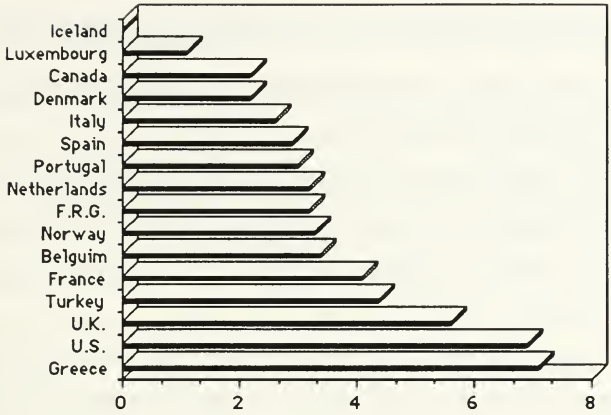

Figure 2.2. NATO'S Military Expenditures as a Percent of GDP.[41]

The consequences of Canada's defense spending pattern have been fourfold:

> ...first, the commitment-capability gap has emerged as a major defence problem; second, Canada's military reliability within the Western Alliance has been called into question; third, in the mid-1980s the Canadian Forces lack the capabilities to make a positive and credible contribution to conventional deterrence (and, more importantly, should deterrence fail, would be unable to perform their assigned roles and missions adequately); and fourth, defence procurement has been adversely affected by nondefence considerations related to industrial benefits and regional economic development.[42]

Probably one of the principal factors contributing to Canada's flagging military posture has been the public's unwillingness to allocate the necessary resources to the armed forces in times other than war. As a result, Canadian politicians have come to place a high degree of emphasis upon

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[41]Canada, Department of National Defence, *Challenge and Commitment: A Defence Policy for Canada*, (Ottawa: Canadian Government Publishing Centre, 1987), 47.

[42]Byers, Adelphi 214: *Canadian Security and Defence*, 31.

diplomacy. The stress on diplomacy has a strong moral appeal among the Canadian citizenry and enables politicians to divert resources to non-military demands for government spending.

The neglect of the armed forces has resulted in Canada, a first world country by all economic standards, becoming a secondary military power. Canada cannot meet its defense commitments nor can it adequately provide for its own security.

In view of its historically low levels of military expenditures, a convincing argument could be made that Canada has used its close proximity to the United States as a means of providing for its security. That is, because of the common borders shared with the U.S., an aggressor could not attack Canada without contemplating a response from the U.S. Moreover, it is highly unlikely that the U.S. would sit idly by and let this occur. Therefore, Canada has been afforded the luxury of this "trump card" as a means of lowering its defense burden. While the U.S. is probably well aware of this situation, it cannot threaten to decouple its defense commitment, as in the case of European members of the Atlantic Alliance, owing to Canada's "cheap ride" on U.S. defense forces, because the security of Canada is central to the security of the continental United States.[43]

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[43]Thompson, "Canadian Defense Policy," 105.

III. CANADA'S DECISION TO MODERNIZE ITS NAVY

It became increasingly apparent in the early 1960s that Canada's contributions to the collective security of NATO and North America had begun to decline. This decline was precipitated when Canada's defense expenditures plummeted from, "a high of $1,802 million [Canadian] (in 1956) [to] a low of $1,546 million (in 1960)."[44] As a result of this roughly $256 million dollar reduction in military expenditures, adjustments had to be made in Canada's military capabilities. The accompanying force reductions led to the realization by the early 1960s that Canada could make only a meager contribution to the defense of North America and NATO.

Canada's limited ability to contribute to collective security had the effect of eroding "...the consensus upon which Canadian defence policy had been based..., and the importance of its role in facilitating the pursuit of Canada's interests in world affairs was called into question."[45] Factions within the government began to question the wisdom in expanding Canada's military capabilities during a time of no anticipated menace.[46]

The Progressive Conservative government of Prime Minister John Diefenbaker, who was in power from 1957 through 1963, proved incapable of shifting the opinion trends back in favor of a credible defense. As a result, the Liberals were able to capitalize on this opportunity in the elections of 1962 and 1963 and to bring to power Lester Pearson, as Prime Minister. Pearson's

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[44]Hector J. Massey, *The Canadian Military: A Profile*, 102.

[45]Ibid., 104.

[46] Ibid.

solution to this growing division within the government was the 1964 White Paper. In this defense posture paper, the Prime Minister reaffirmed Canada's commitment to collective security; however, he made no mention of what Canada's contribution would be in the face of its dwindling resources.[47] This evidence suggests that Pearson was attempting to appease both the Liberal and Conservative factions within the country.

The objectives of Canada's defense forces as outlined in the White Paper were:

- To preserve the peace by supporting collective defence measures to deter military aggression
- To support Canadian foreign policy including that arising out of... participation in international organizations
- To provide for the protection and surveillance of [Canadian] ...territory, ...air-space,...and coastal waters."[48]

In accomplishing these objectives the White Paper stated that, "...it is essential that a nation's diplomacy be backed up by adequate and flexible military forces to permit participation in collective security and peacekeeping, and to be ready for crises should they arise."[49] With regard to the protection of Canada, it was stated that:

> ...for the foreseeable future, [it is] impossible to conceive of any significant external threat to Canada which is not also a threat to North America as a whole. It is equally inconceivable that, in resisting clear and unequivocal

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[47]Ibid.

[48]Honourable Paul Hellyer, and Honourable Lucien Cardin, *White Paper on Defence*, (Ottawa: Queen's Printer and Controller of Stationary, 1964), 5.

[49]Ibid., 11.

aggression against Canadian territory, Canada could not rely on the active support of the United States.[50]

The net effect of these assertions was probably to add to the already growing ambivalence among the Canadian citizenry. Here, on the one hand, it was implied that Canada would meet its NORAD, NATO, and United Nations (UN) peacekeeping commitments. On the other hand, Canada more or less assumed that the protection of its sovereign territory could be left to the United States. The 1964 White Paper marked the beginning of an era of erosion in Canada's defense polices.

In 1968 when Pierre Trudeau, a Liberal, came to power, he was immediately faced with resolving the debate over Canada's defense roles and missions in view of its decreasing capabilities. As a result of the United Nations Emergency Force (UNEF) being expelled from Egypt in 1967, Prime Minister Trudeau immediately rejected the peacekeeping role outlined for Canada in the 1964 White Paper. Instead he called for making Canada and Canadian sovereignty the central focus of Canada's defense and foreign policies.[51]

Trudeau immediately made decisions that were to affect Canada's NATO commitments, NORAD commitments, and defense spending policies. First, he announced that Canada would reduce its forces in Western Europe by 50 percent. Second, the decision was made that Canada would not participate

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[50]Ibid., 13.

[51]Armstrong, Armstrong, and Wilcox, *Canada and the United States: Dependence and Divergence*, 229.

with the U.S. in any active missile defense system in North America. Finally, the defense budget was frozen at $1.8 billion (Canadian) for three years.[52]

These announced changes were not readily apparent in the 1971 White Paper, where the objectives were outlined as:

- The surveillance of our own territory and coast-lines, i.e. the protection of our sovereignty;
- The defence of North America in co-operation with U.S. forces;
- The fulfillment of such NATO commitments as may be agreed upon; and
- The performance of such international peacekeeping roles as we [the Canadians] may from time to time assume.[53]

In reviewing the the objectives set forth in the 1971 White Paper it is is apparent that:

> The real function of the White Paper therefore was not so much to announce major modifications in the substantive activities of the Canadian armed forces, as to equip them with a new rationale falling more appropriately in line with their eroded dimension.[54]

Comparing the defense objectives of the 1964 White Paper with those of the 1971 it is readily apparent that there was a fundamental change in defense policy. While the 1964 White Paper is also considered a Liberal document, in practice though not completely in principle, it did not totally disregard the concerns of the Conservatives. Trudeau, on the other hand, did not attempt to co-opt the Conservative faction in the 1971 White Paper, which

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[52]Ibid.

[53]Donald S. MacDonald, *Defence in the 70s*, (Ottawa: Queen's Printer, 1971), 16.

[54]Massey, *The Canadian Military: A Profile*, 109.

can be described as uniquely Liberal. For example, the number one priority in the 1964 White Paper was collective security, but sovereignty assumed this position in 1971. Moreover, only a conditional commitment was made to NATO's collective security, and it was given the third position following the cooperative defense of North America.

The 1971 White Paper clearly demonstrated Canada's retrenchment from world politics. This was in part the result of the administration's highly optimistic perception of changing world affairs. According to the 1971 White Paper:

> The most significant changes on the international scene with consequences for Canadian defence policy have occurred in the nature of the strategic nuclear balance between the United States and the Soviet Union, and in the state of East-West political relations both in Europe and directly between the two super-powers. These changes, together with the emergence of China as a nuclear power and the growing economic strength of Europe and Japan, have resulted in a loosening of the bipolar international system. This trend is emphasized by the announcement that President Nixon of the United States will shortly be visiting the Peoples' Republic of China, indicative of a major change in policy for both countries. On the other hand, the prospects for effective international peacekeeping, which were viewed with some optimism in 1964, have not developed as had been hoped.[55]

Under Trudeau's leadership, Canada's military capabilities continued to erode until 1975, when Minister of Defence James Richardson, in a speech, called for Canada to take a more active role in NATO. This speech clearly indicated a change in the policies established in Trudeau's 1971 White Paper. The three factors that significantly contributed to this announced policy change were Canadian press criticism of Trudeau's defense policies, the suggestion of U.S. Secretary of Defense James Schlesinger that Canada should

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[55]MacDonald, *Defence in the 70s*, 1.

place a greater priority upon NATO than NORAD, and the Canadian Defence Structure Review (DSR).[56] The review was an acknowledgement by the Liberals that Canada's military capability had eroded to dangerously low levels. As a result of the DSR, defense funding was to increase and modest capital improvements were to be initiated.Specifically, the DSR indexed the defense budget to the rate of inflation and called for increasing capital expenditures from 11 percent to 23 percent.[57] However, this level of growth in capital expenditures was not realized until fiscal year 1982-83.[58]

Since that time, it is pointed out in the 1987 White Paper that:

> ...more money has been spent on the purchase of equipment...nevertheless, even this funding is insufficient to overcome the 'bow wave' of deferred equipment acquisition built up since the 1960s. If this condition were allowed to continue unaltered, it would soon lead to "rust-out", the unplanned and pervasive deterioration in the military capabilities of the Canadian Forces. Eventually our [Canada's] commitments could not be safely maintained and, finally, even any illusion that we were contributing to collective security would disappear.[59]

From the above, it appears that Prime Mulroney is seeking to aggressively continue improvements set in motion by the DSR and to make Canada a more valuable partner in collective security.

The Conservative government of Prime Minister Mulroney has in fact pledged to improve Canada's flagging military posture. On 5 June 1987, the

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[56]Armstrong, Armstrong, and Wilcox, *Canada and the United States: Dependence and Divergence*, 230.

[57]Byers, *Adelphi Papers 214*, 11.

[58]Canada, Department of National Defense, *Challenge and Commitment*, 45.

[59]Ibid., 45-46.

government made public the long awaited defense White Paper.[60] This paper on Canada's defense posture was the first in sixteen years. But unlike the 1971 defense policy paper that reflected the optimistic political situation of the detente era, the 1987 White Paper assessed the threat that the Soviets pose to the free world and Canada's ever widening commitment-capability gap in view of this threat.[61]

In an attempt to narrow this gap, the 1987 White Paper principally called for enhancing Canada's naval capacity. Specifically, the improvements called for were: the installation of a seafloor sonar system in the Arctic, the replacement of the 26 year old Sea King helicopters, the construction of six new frigates, and the development of a mine counter measure (MCM) capability. But the most controversial improvement called for was the procurement of 10 to 12 nuclear fast attack submarines (SSNs).[62]

Another major change called for in the White Paper is changing Canada's wartime commitment of sending a Canadian Air-Sea Transportable (CAST) brigade group and two rapid reinforcement squadrons to Norway. This decision was influenced by the fact that Norway does not permit the stationing of foreign forces on its soil during peacetime. For this reason, Canadian forces committed to Norway must be held in reserve inside Canada. The Canadian leadership judges that these assets may not be able to reach Norway during a time of crisis; or, if they were successful in reaching Norway, they might be

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[60]Canada, Department of National Defence, *Challenge and Commitment: A Defence Policy for Canada*, (Ottawa: Canadian Government Publishing Centre, 1987).

[61]Thompson, "Canadian Defense Policy," 106.

[62]Canada, Department of National Defence, *Challenge and Commitment*, 49-50.

cut off from further support. Therefore, it was decided to station these forces in central Europe, where they would be more readily available in the event of a crisis.[63] It is believed that these improvements and changes will provide Canada with:

> A maritime defense policy which will provide for the exercise of sea control in support of sovereignty in three oceans will indicate to the world that Canada is serious about the support and protection of its interests. At last Canada will be seen as a credible partner in the defence of North America and in NATO and not just a token member.[64]

In particular, these improvements are intended to enhance Canada's ability to accomplish its articulated defense policy of:

- Maintenance of strategic deterrence,
- Credible conventional defence,
- Protection of Canadian sovereignty,
- Peaceful settlement of international disputes, and
- Effective arms control.[65]

Considering previous defense policies and military expenditures over the past three decades, these improvements proposed in the 1987 White Paper marked a radical shift in Canada's political views towards military preparedness. This shift is evident in an examination of the defense objectives set forth in the 1964 and 1971 White Papers. The foreign policy views of previous

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[63]Ibid., 61-62.

[64]Andrew C. McMillin, "Three-Ocean Policy would Enhance Credibility," *Chronicle-Herald*, Ottawa, June 3, 1987, 1.

[65]Canada, Department of National Defense, *Challenge and Commitment*, 49.

administrations were distinct from those of the current Mulroney government.

The Canadian government believes that the SSNs called for in the 1987 White Paper will enhance its ability to make an enduring contribution to collective security. It is believed that this can be achieved through the accomplishment of its defense policy objectives. A review of these objectives and how the proposed SSNs might aid in their accomplishment is offered to gain some insight into why Canada has chosen to go nuclear. While Arms Control and Peacekeeping efforts are admirable, because of their diplomatic nature and the limited scope for SSNs in the accomplishment of these two goals, a discussion of these objectives is not offered.

A. MAINTENANCE OF STRATEGIC DETERRENCE

The Canadian government acknowledges the importance of strategic deterrence and recognizes that it can only be achieved through a strategic balance between the superpowers. Furthermore, it is postulated that strategic deterrence can only be maintained by the possession of of a diversified nuclear force. Although the Canadian government recognizes the importance of a credible nuclear force, it has made it clear that Canada has no intention to acquire nuclear weapons. The government believes that Canada can best serve strategic deterrence through means such as NORAD and other measures that deny the Soviets access to North America, leaving the actual possession and use of such weapons to their allies. Moreover, the Canadian government believes that the West can not rely solely upon nuclear weapons for deterrence. Instead, the alliance must also possess credible conventional

forces to counter aggression. The obvious benefit of possessing such forces is that deterrence becomes more credible and the nuclear threshold is raised.

B. CREDIBLE CONVENTIONAL DEFENCE

While Canada delegates nuclear deterrence to its allies, it believes that it can make a credible contribution to deterrence through conventional means. One of the primary reasons given for the proposed acquisition of 10 to 12 SSNs is to bolster the "collective maritime strength of the Alliance."[66] It is stated that the SSNs can enhance the collective maritime strength of NATO by providing for a three ocean (Atlantic, Pacific, and Arctic) patrol capability.

Canada's possession of a three ocean patrol capability not only contributes to collective security but also provides for its security and economic survival during a time of crises. As previously discussed, Canada possesses the world's longest coastline and borders three major oceans. Currently, in the Pacific Canada has only eight frigates/destroyers to provide for its security and virtually no patrol capabilities for its Arctic coastline.

In addition, during the past twenty years, seaborne trade has become of paramount importance for Canada's economic survival. Today, Canada's trading partners include not only the United States and Western Europe but also countries of the Pacific rim. These exports accounts for 29 percent of Canada's GNP and 34 percent of these exports are transported by sea.[67] Moreover, many vital resources arrive in Canada by sea. With the opening of

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[66]Ibid., 49.

[67]Bruce Johnston, "Three Ocean Strategy: Right for Canada, Right for NATO," *Canadian Defence Quarterly*, 17, February 1988, 33.

the Arctic for exploration, it can be expected that the sea in the no to distant future will play an even more vital role.

It is, for example, maintained that "...vital sea lines [must] be maintained in order to resupply and reinforce Western Europe."[68] Clearly, the Canadian government believes that SSNs will enhance its capability to defend NATO SLOCs in the Atlantic during a time of conventional war. Increasing NATO's capability to conduct successful SLOC operations enhances deterrence by demonstrating to the Soviets that an invasion of Western Europe would be met by an effective military response.

Similarly, the Canadian government judges that SSNs in the Pacific could help to keep open vital sea lines between North America and countries of the Western Pacific as well as between Alaska and the West coast of the United States. Increasing Soviet operations in the Northeast Pacific region demonstrate the necessity for Canada to possess the capability to keep these sea lanes open.

Finally, the deep channels of the Canadian Arctic could provide a sequestered sanctuary for Soviet submarines to launch cruise or ballistic missiles or to intercept Western submarines entering the region. Again, Canadian SSNs may be useful to help to deter the Soviets from pursuing this strategy.[69]

The above considerations lend some merit to the arguments for Canada acquiring SSNs. However, as pointed out below, one of the primary arguments for Canada acquiring SSNs has not centered on enhancing NATO's

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[68]Canada, Department of National Defense, *Challenge and Commitment*, 50.

[69]Ibid.

defensive capabilities, but instead has centered on Canada asserting its sovereignty in the Arctic archipelago vis-á-vis the United States.

C. ENFORCEMENT OF CANADA'S SOVEREIGNTY CLAIMS

While it is obvious that asserting Canada's sovereignty over the Arctic archipelago is not the only reason for the proposed acquisition of the 10 to 12 SSNs, it is certainly an issue that has received a great deal of publicity in the debate over Canada's new defense policy.

The White Paper states that "...after the defense of the country itself, there is no issue more important to any nation than the protection of its sovereignty. The ability to exercise effective national sovereignty is the very essence of nationhood."[70] It is further stated that the government will not permit "...Canadian sovereignty to be diminished in any way."[71] These statements appear to be primarily directed toward the United States, which has not recognized the Northwest Passage (Figure 3.1) as falling within Canada's internal waters. Joe Clark, the Canadian Secretary of State for External Affairs, has gone on record as saying, "...the greatest threat to sovereignty in the Arctic is the U.S."[72]

It is proposed that these submarines, "independently or in cooperation with other [allied] maritime forces, would be responsible for deterring or countering challenges to territorial sovereignty."[73] Canada does not plan to

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[70]Ibid., 23.

[71]Ibid., 24.

[72]Clark cited in Thomas C. Pullen, "What Price Canadian Sovereignty," *Proceedings*, September 1987, 66.

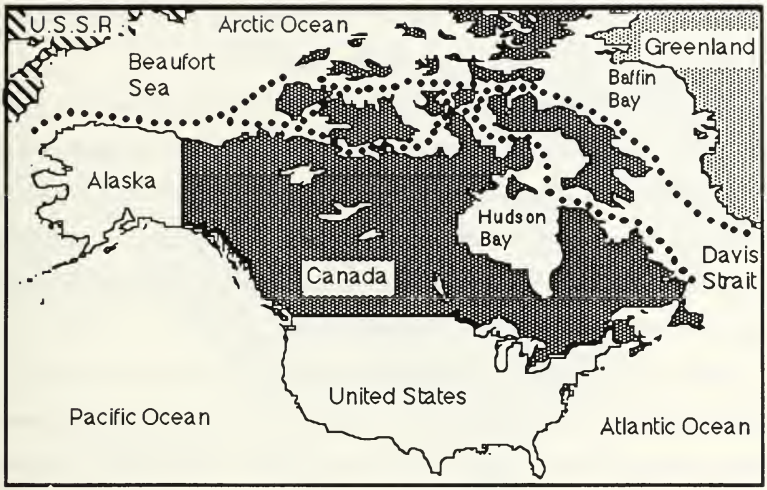

Figure 3.1. Northwest Passage: Routes through Canadian Waters.[74]

attack a foreign submarine during peace time, but if a foreign submarine is encountered, it will be identified by photographs or technical signatures and a formal complaint will be filed through diplomatic channels.[75]

The issue of sovereignty over the Arctic archipelago was first raised in 1876, when an American named William Mintzer sent ships and men to Cumberland Sound to mine and load mica without proper permission. Although he had requested prior permission two years earlier from the British government without any response, Canadians were outraged at

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[73]Ibid.

[74]Ibid., 68.

[75]Francis, "Canada to Join World's Exclusive Nuclear-Sub Club," 10.

Mintzer's actions. This incident marked the beginning of the dispute over Canada's sovereignty in the Arctic archipelago.[76]

Not wanting to be party to any territorial entanglements between the United States and Canada, the British government in 1880 relinquished title to Canada of some 380,000 square miles of islands between Canada and Greenland. The transferred area included both the Northern waters and the continental shelves.[77] The ceded region supposedly gave Canada exclusive control over the entire Arctic archipelago region.

After the Mintzer incident and the transfer of the Arctic archipelago, no other complaints about sovereignty encroachment surfaced for the next ninety years. In fact, the United States and Canada cooperated in numerous joint ventures within the region without any accusations of U.S. encroachment. The sovereignty issue was not rekindled until 1969, when the icebreaker *Manhattan* transited one of the routes through the Northwest Passage.[78] In this incident, the U.S. informed Canadian officials of the *Manhattan's* impending passage and Canada even sent along observers to participate; still, outcries of sovereignty encroachment surfaced throughout Canada. The *Manhattan's* transit marked a new era in the sovereignty debate over the Arctic archipelago, one that would not soon be forgotten.

The incident that has brought the sovereignty dispute to its current intensity was the 1985 transit of the U.S. Coast Guard's icebreaker *Polar Sea (WAGB-11)* from Thule, Greenland, to the Chukchi Sea (See Figure 3.2).

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[76]Pullen, "What Price Canadian Sovereignty?" 66.

[77]Ibid.

[78]Ibid., 71.

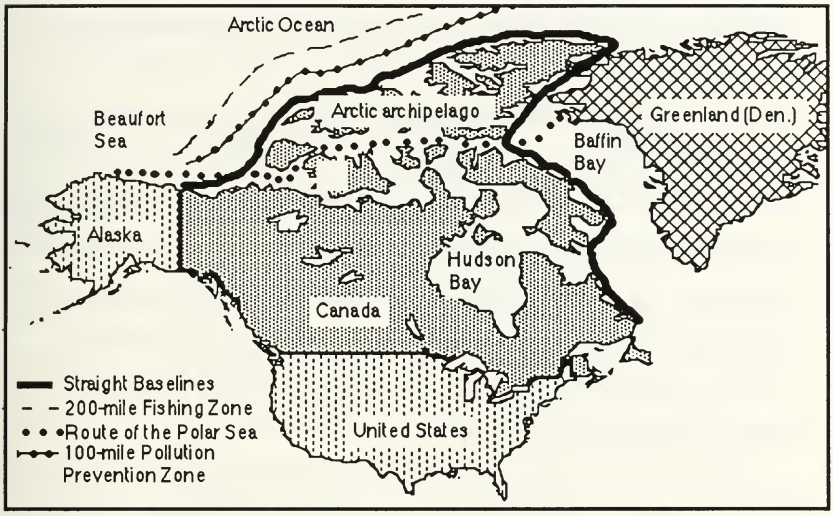

Figure 3.2. Canada's Arctic Waters.[79]

Again, the U.S. government informed Canada of the *Polar Sea's* planned passage; however, in response, "Canada informed the U.S. that it considered all waters of the Canadian Arctic archipelago as historic internal waters and that a request for authorization to transit the Northwest Passage would be necessary."[80] Obviously, the U.S. placed little credence in Canada's claim because the *Polar Sea* proceeded to transit the Northwest Passage to its ultimate destination without requesting the permission of the Canadian

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[79]Pharand, "Arctic Sovereignty: Does Canada own the Northwest Passage?," *Proceedings*, July 1988, 98.

[80]Donat Pharand, "Arctic Sovereignty: Does Canada own the Northwest Passage?," *Proceedings*, July 1988, 98.

government. Other complaints of sovereignty encroachment have been spurred by U.S. SSNs transiting from the Atlantic Ocean between Canada and Greenland through the archipelago into the Arctic. (See Table 3.1) In 1986, the Pentagon released photographs of three U.S. SSNs surfaced at the North Pole.[81] Canadians know that the U.S. uses the route between Canada and Greenland instead of the route between Greenland and Norway to reach the Arctic because it is less likely that U.S. submarines will be detected by the Soviets; nevertheless, this fact has had little effect upon quieting the encroachment complaints.[82] As might be expected, Canadians have been Canadians have been outraged by the U.S. actions and the sovereignty issue has reached a new level of intensity.

The U.S. has maintained that the Northwest Passage is an international strait and therefore falls into the same basic category as the high seas. As delineated in the first United Nations Conference on the Law of the Sea, in 1958, "a coastal state could not suspend innocent passage in straits used for international navigation. Moreover, the 1982 convention establishes a more liberal right of 'transit passage' for aircraft and submerged submarines as well as surface ships..."[83] Therefore, if the Northwest Passage is believed to be an international strait under international law, Canada loses all rights to its claim of sovereignty over the region's international waters.

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[81]Herbert Denton, "Canada Plans a Military Buildup in the Arctic Sensing a U.S. Threat to its Sovereignty," *Washington Post*, 14 May 1987, 35.

[82]"Canada's Plan for Nuclear Submarines Raises U.S. Suspicion," *New York Times*, 4 May 1987, 14.

[83]Bernard H. Oxman, David D. Caron, Charles L. O. Buderi., *Law of the Sea: U.S. Policy Dilemma*, (San Francisco: ICS Press, 1983),151.

TABLE 3.1. ANNOUNCED ARTIC SUBMARINE OPERATIONS[84]

DATE	SUBMARINE	NORTH POLE	NOTES
August 1958	Nautilus (SSN-571)	Yes	First ship to reach pole
August 1958	Skate (SSN-578)	Yes	
March 1959	Skate	Yes	First surfacing at pole: first Winter cruise surfaced 9 times
February 1960	Sargo (SSN-583)	Yes	
August 1960	Seadragon (SSN-584)	Yes	Via Northwest Passage from Atlantic to Pacific
June 1962	Leinskiy Komsomolets (Soviet)	Yes	First Soviet submarine to reach pole
July-August 1962	Skate and Seadragon	Yes	First multi-submarine operation
February 1967	Queenfish (SSN-651)	Yes	First single-screw submarine to operate under the ice Baffin Bay operations
March-April 1969	Skate	No	
April 1969	Whale (SSN-638) and Pargo (SSN-694)	Yes	First SSN-637 class to reach pole; Pargo surfaced 20 times in ice
July-August 1970	Queenfish	Yes	Sierian shelf operations
Nov-Dec 1970	Skate and Hammerhean	No	
March 1971	Dreadnought (British)	Yes	First British submarine to reach pole
Mar-Apr 1973	Seadragon and Hawkbill (SSN-666)	No	Bering Sea operation
Mar-May 1975	Bluefish (SSN-675)	Yes	Greenland Sea operations
Apr-May 1976	Gurnard (SSN-662)	Yes	Beaufort Sea, shallow-water operations
Sept-Oct 1976	Sovereign (British)	Yes	
Mar-Apr 1977	Flying Fish (SSN-673)	Yes	
Oct 1978	Pintado (SSN-672)	Yes	
Apr-May 1979	Archerfish (SSN-678)	Yes	Baffin Bay, Nares Strait operations
Oct 1981	Silversides (SSN-679)	Yes	
Dec 1982-Jan 1983	Tautog (SSN-639) and Aspro (SSN-648)	Yes	
August 1983	L. Mendell Rivers (SSN-686)	No	

[84]Norman Polmar, "Sailing Under the Ice," *Proceedings*, June 1984, 122.

However, Canada does not agree with the U.S. declaration; and as a result, Joe Clark announced that Canada was invoking the "straight baseline" provision of the 1958 Territorial Sea Convention and the 1982 Law of the Sea Convention.[85] In essence, the straight baseline is a means of defining the area in which Canada claims exclusive sovereignty. According to Clark, the baselines will "...define the outer limits of Canada's historic inland waters."[86]

Although Mr. Clark is quite adamant about Canada's rights to sovereignty over the waters of the Arctic archipelago, a closer examination of two legal determinants of sovereignty reveals that Canada's claim to the entire region is somewhat questionable.

Donat Pharand has examined some of the more prominent arguments offered in support of Canada's right to sovereignty in the Arctic archipelago. Professor Pharand considers two legal determinants of sovereignty: *historic title* and *baselines*.[87]

In the case of historic title, some may wrongly assume that the British transfer of this region to Canada in 1880 constituted Canada's ownership or historic title to this region. However, as Professor Pharand points out, for historic title to be surmised applicable to the waters surrounding the Arctic archipelago, "Canada would have to establish that over the years it has exercised the same kind of exclusive control that is required to acquire

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[85]Pharand, "Arctic Sovereignty: Does Canada Own the Northwest Passage?," *Proceedings*, July 1988, 98.

[86]Ibid.

[87]Ibid., 99.

sovereignty over land areas."[88] In addition, "Canada would have to show that its claim has been met by the acquiescence of foreign states, particularly those directly affected."[89] As previously discussed, Canada was without a naval capability until the early twentieth century and even after the Navy's establishment it was incapable of providing for the control of the waters in the Arctic archi-pelago region. Moreover, none of the countries within the Arctic region have conceded sovereignty over these sea areas to Canada. Thus, Canada's claim of sovereignty over the waters of the Arctic archipelago does not meet the historic title test of exclusive control test; and Canada therefore can not claim ownership under these auspices.

On the other hand, Professor Pharand argues that Canada is justified in applying baselines (Figure 3.2) around the islands of the Arctic archipelago in establishing the perimeter of its sovereign waters. This contention is based on the fact that the archipelago contains numerous scattered islands and it is virtually impossible to determine territorial waters in the prevailing conditions. Therefore, the placement of baselines around the outermost perimeter of the islands compensates for the irregularities of the islands' coastlines and encapsulates the region in which Canada assumes sovereignty.[90]

As previously mentioned, the baseline provision is covered by both the 1982 Law of the Sea Convention and the 1958 Convention; however, the establishment of baselines is not as clear a procedure as some Canadians

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[88]Ibid.

[89]Ibid.

[90]Ibid.

have suggested. While the 1958 convention and the 1982 convention do provide for the establishment of baselines in some situations, they do not provide for the encapsulation of an international strait into a country's territorial domain. Ambassador James Malone, who was the Special Representative of the President for the Third U.N. Law of the Sea Conference, pointed out that the baseline provision cannot be applied around an archipelago in conjunction with a continental land mass.[91] Moreover, one cannot claim sovereignty over an international strait.

Professor Pharand argues that the Northwest Passage is not an international strait. In supporting this argument, he used evidence provided by the *Corfu Channel Case of 1949*. In this case, the tests that were used in the determination of an international waterway were *geography* and *function*. The geographical test is satisfied whenever "the territorial waters in the natural passage between adjacent landmasses overlap, joining two parts of the high seas...or a part of the high seas with the territorial sea of a foreign state."[92] The Northwest Passage meets the geographic criteria for an international strait established in the *Corfu Channel Case*.

However, in the case of function, Professor Pharand states that the Northwest Passage fails to meet this criterion. The functional criterion is principally based upon the number of ships that transit a strait. During the past 80 years, there have been only 45 complete transits as opposed to thousands of ships that have transited the Corfu Channel; therefore, the professor

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[91]Discussion with Ambassador Malone at the Naval Postgraduate School, 13 July 1988.

[92] Donat Pharand, "Arctic Sovereignty: Does Canada own the Northwest Passage?," *Proceedings*, July 1988, 99.

judges that the limited use of the Northwest Passage serves as a means of disqualifying it from falling into the category of an international strait. In his view, the Northwest Passage should be deemed territorial waters under Canadian sovereignty.[93]

Pharand's conclusion, if accepted, would serve to strengthen Canada's position. Given the arduous nature of penetrating this region, however, the 45 transits may satisfy the function criterion. In other words the Corfu Channel Case may well support the U.S. contention that the Northwest Passage is an international waterway.

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[93]Ibid.

IV. SUBMARINE PROCUREMENT

Even before the White Paper announced plans to procure 10 to 12 nuclear fast attack submarines, plans were underway to procure conventional replacements for the three Oberon submarines. A Project Management Office (PMO) had been established and negotiations were underway with possible source contractors. However, after it was announced that nuclear-powered submarines were favored as replacements, the PMO was terminated and a new Canadian Submarine Acquisition Project (CASAP) was established.[94] CASAP is responsible for the planning and procurement of Canada's first nuclear submarine force. Figure 4.1 lists the events and milestones that CASAP plans to accomplish in the acquisition of the SSNs.

A. SOURCE

Although Canadians have been building nuclear power plants to generate electricity since the 1950s, they do not possess the technical expertise to build nuclear submarines. Therefore, first on the agenda for CASAP is the selection of a prime contractor that will build the submarines. To aid CASAP in the selection process, a memoranda of understanding (MOU) have been signed with Great Britain and France, the two possible source contractors. These memoranda of understanding (MOU) have been signed with Great Britain and France, the two possible source contractors. These memoranda have

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[94]Canada, Department of National Defence, *Backgrounder Documentation: Canadian Submarine Acquisition Project*, (Ottawa: 1987) 1.

enabled CASAP to obtain both cost and technical information that will aid in its decision as to which submarine to recommend to the government.

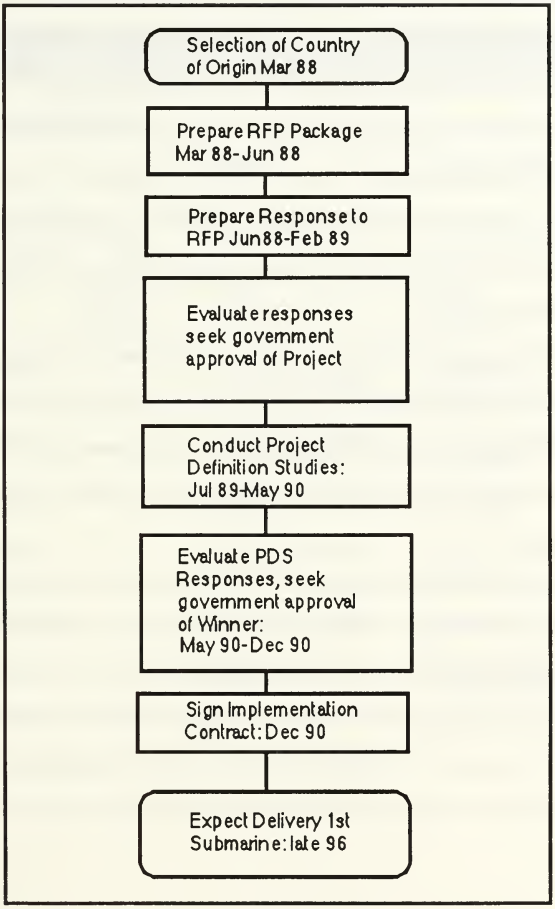
Selection of Country of Origin Mar 88
Prepare RFP Package Mar 88-Jun 88
Prepare Response to RFP Jun88-Feb 89
Evaluate responses seek government approval of Project
Conduct Project Definition Studies: Jul 89-May 90
Evaluate PDS Responses, seek government approval of Winner: May 90-Dec 90
Sign Implementation Contract: Dec 90
Expect Delivery 1st Submarine: late 96

Figure 4.1. Events and Milestones for CASAP.[95]

[95] *Ibid.*, 6.

It might be speculated that no U.S. contractors were considered as a possible source contractor because of the potential political friction between the two governments over the proposed use of the submarines. It has been reported that when Canada first announced plans to procure nuclear submarines, no U.S. defense contractor took the notion seriously.[96] The Canadian government has stated that the reason for excluding U.S. contractors from the bidding process was not politically inspired, but rather the result of cost considerations. As a matter of fact, the United States is currently building only the 688 Los Angeles class SSN at a cost of approximately $750 million per copy.[97]

Considering Canada's historic austerity in defense spending, cost may well have been a major contributing factor in excluding U.S. contractors. Nevertheless, because of technology transfer agreements, the U.S. will ultimately play a major role in CASAP no matter who Canada chooses to build its submarines.

The two submarines being considered by the Canadian government are the British-built Trafalgar Class and the French-built Rubis Class. Table 4.1, compares some of the technical characteristics of these two competitors. As shown, the Trafalgar is the larger and faster of the two boats. Moreover, the British claim that the Trafalgar possesses operational superiority over the Rubis in that it is quieter and capable of traveling under and breaking

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[96]David Silverberg, "U.S. Navy May Snag Canadian Nuclear Sub Buy," *Defense News*, 23 November 1987, 1.

[97]Francis, "Canada to Join World's exclusive Nuclear Sub Club," 10.

TABLE 4.1. COMPARISON OF RUBIS AND TRAFALGAR CLASS SUBMARINES[98]

RUBIS / TRAFALGAR CLASS SSN'S

CHARACTERISTICS	RUBIS	TRAFALGAR
Displacement: Surfaced / Submerged	2,385 / 2,670 tons	4,200 / 5,208 tons
Dimensions: (length)	72.1 m	85.4 m
(Beam)	7.6 m	9.2 m
(Draught)	6.4 m	8.2 m
Machinery:	2 Turbo Alternators: 1 Electric Main Motor	2 geared Steam turbines
Reactor:	1 Pressurized water Cooled	1 Pressurized water cooled
Speed:	25 Knots	32 knots
Armament:	4 X 21in (533 mm) tubes	5 X 21 in (533 mm) tubes
Complement:	66 officers and men	97 officers and men
Builder:	Cherbourg Naval Dockyard	Vickers Shipbuilding & Engineering Ltd.

[98]Canada's *Fact Sheet* (Pamphlet) Department of National Defence, NP.

through ice of more than one meter.[99] Given that one of the expressed purposes of Canada's SSN program is to maintain a patrol under the Arctic ice, these capabilities are critical and probably give the Trafalgar a slight edge in the competition.

Meanwhile, the French have indirectly acknowledged the limitations of the Rubis by promising to reinforce its conning tower, giving it the capability of surfacing through the Arctic ice.[100] Additionally, the French recently launched an enhanced version of the Rubis, with improved detection and weapons capabilities. The improvements include more sensitive listening devices, a very low-frequency towed array, new tactical data processing systems, and the capability of launching simultaneously the SM-39, the submarine-launched Exocet, and multi-purpose wire-guided torpedoes.[101]

While the Canadians appear to favor the British as a supplier, the choice is complicated because of a 1958 agreement between the United States and Great Britain barring the transfer of nuclear technology to a third country.[102] In addition, Canada and the United States signed an agreement, in 1959, that bars Canada from receiving nuclear technology from a third nation.[103] Although in October 1987 the U.S. gave Britain preliminary approval to

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[99]David R. Francis, "Canada Takes Nuclear-Sub Plunge," *The Christian Science Monitor*, 22 Feb 1988, 11.

[100]Ibid.

[101]"France Launches SSN," *Jane's Defense Weekly*, "France Launches SSN," 14 May 1988, 920.

[102]"Canada Sees Nuclear Subs As Key to Arctic Defenses," *Aviation Week*, 21 September, 1987, 88.

[103]"SSN for Canada: Path Cleared," *Jane's Defense Weekly*, 7 May 1988, 871.

provide Canada with data on the Trafalgar propulsion plant and President Reagan reaffirmed this decision in his meeting with Canadian Prime Minister Mulroney in May 1988, the Canadian government is cautiously awaiting the final approval of the U.S. Congress before announcing its decision as to which submarine it will purchase.[104] In an article for the Toronto *Globe and Mail*, U.S. Congressman Charles E. Bennett, Chairman of the Seapower Subcommittee of the House Armed Services Committee, voiced his concerns with the transfer of nuclear technology to Canada. He stated that:

> ...Congress should bear in mind [when considering this issue]...that buying anything but the best submarines would likely not make much of a difference in combating Soviet submarines....Canada does not appear ready to spend enough money to buy such a capability. Unless Canadians are willing to pay the costs of developing a truly independent nuclear-propulsion program....U.S. assistance at the outset could lead to U.S. involvement forever. The United States would be put in the position of accepting considerable responsibility for a long-term program over which it would not exercise adequate control.[105]

Should the Canadians choose the smaller French Rubis class submarine, nuclear technology could be transferred without U.S. consent; but the French submarine is not compatible with the superior U.S.-built MK 48 torpedo, the standard torpedo of NATO.[106]

The two fundamental differences between the French-built L5 and the MK 48 are the homing modes and speeds at which the torpedo travels. The L5 has only a passive/active homing mode with a maximum speed of 35 knots.

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[104]Ibid.

[105]*Toronto Globe and Mail*, 29 October 87, A7, cited in *The Centre For Foreign Policy Studies Defence Newsletter*, 6, October 1987, 10-11.

[106]"Canada Sees Nuclear Subs as Key," 85.

On the other hand, the MK 48 is wire-guided, its guidance can be controlled by a member of a submarine crew, and as a backup it also is equipped with a passive/active homing modes. It is reported that the MK 48 can achieve speeds of 55 knots.[107] To make the Rubis compatible with the MK 48, U.S. permission would be required.

Providing that all of the technology transfer problems are resolved, the first contracts for the new submarines are scheduled for release in 1990, with the first submarine to be ready to join MARCOM by late 1996.[108]

B. COST

The Canadian government has estimated that the submarine program will cost a total of 8 billion dollars (Canadian) over a period of 15 years. Of this total amount, it is forecast that 5 billion will be spent for the proposed SSNs and 3 billion will be spent for training, infrastructure, and weapons.[109] When one considers that Canada currently spends a total of only $10.34 billion(Canadian) per year on its combined armed forces, the SSN acquisition is indeed an ambitious undertaking by the Canadian Government.

To make this total expenditure more palatable to the Canadian citizenry, the government has committed itself to an annual "real growth in the defense budget of two percent per year after inflation, for the fifteen-year planning

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[107]J.R. Hill, Admiral RN (Ret), *Anti-Submarine Warfare*, (Annapolis: Naval Instituted Press 1985), 91.

[108]*Facts About Canada's Nuclear-Propelled Submarines*, (Pamphlet), Department of National Defence 4.

[109]R.E. Stansfield, "Canadian Navy Steers New Course," *The Submarine Review*, January 1988, 32.

period."[110] Within this 15 year planning period, the government will introduce a "rolling five-year" plan that will be reviewed each year to "establish budgets for the following five-year period, and planning guidance for the remaining ten-years."[111]

C. CRITICISMS OF THE PROPOSED SUBMARINE PLAN

As one might expect, the announcement of the decision to purchase nuclear submarines drew immediate criticism from both within and outside Canada. An opinion poll recently conducted by the Canadian Centre for Arms Control and Disarmament determined that 59 percent of those responding disapproved of the proposed submarine plan.[112] The two underlying reasons for the disapproval of the submarine program appear to be cost and the possible employment of the submarine force. This is not surprising when one considers Canada's historic ambivalence toward the military.

As previously stated, the Canadian government has estimated that the proposed submarine plan will cost 8 billion dollars (Canadian) over a period of 15 years. Critics believe that this is a very conservative estimate.[113] Defense planners, both within and outside Canada, have estimated that the cost of the associated infrastructure could easily raise the cost of the submarine plan to

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[110]Canada, Department of National Defence, *Challenge and Commitment*, 67.

[111]Ibid.

[112]*Ottawa Citizen*, 26 May 1988. D19. Cited in the Contre for Foreign Policy Students, Department of Political Sciences, Dalhousie University, *Defense Newsletter* 7, May 1988, 19.

[113]*Canadian Nuclear Submarine Fact Sheet*, Department of National Defence. 2.

10 billion dollars.[114] In view of the price tag, many Canadians believe that the SSN plan is simply too expensive for Canada. Additionally, critics within the government fear that the expense of the submarine plan will cripple other defense programs. Brig-Gen. Terry Liston, Chief of Operational and Force Development, said, "...the navy would almost certainly have to cancel the last 6 of 18 new patrol frigates now planned."[115] Aside from cost considerations, critics fear that the nuclear submarines will lead to Canada's involvement in "the tense undersea maneuvering between the United States and Soviet nuclear fleets."[116]

It is assumed that there has been no public British government criticism of Canada's submarine procurement plan because of the possibility of Great Britain becoming a source supplier. However, in an editorial in the British *Economist* magazine it was stated that the purchase of the submarines:

> ...appeals to the anti-American plasma that flows through many Canadian veins but it can do neither them nor the alliance any good to spend so much money feeding their resentments. Canadian officials admit that they drew up the plan for 10-12 submarines without much idea of the total cost. They were taken aback when British mathematicians totted up the probable all-in figure. [The magazine says there are better uses for the money]...such as putting an armoured division or two into West Germany, instead of the lonely little brigade it has there now.[117]

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[114]Ian Austen and Marc Clark, "Cool Criticism From Washington," *Maclean's*, 18 May 1987, 17.

[115]Ibid.

[116]"Canada May Lose Nuclear Sub Plan," *New York Times*, 27 November 1987, 13.

[117]*Halifax Daily News*, May 12, 1988, 1. Cited in the Contre for Foreign Policy Students, Department of Political Sciences, Dalhousie University, *Defense Newsletter* 7, May 1988, 17.

The United States' principal concern with Canada's proposed submarine plan is that one of the apparent purposes might be to deny U.S. fast attack submarines access to the Arctic. In the U.S. view, the very essence of North America's security is dependent upon U.S. submarine operations in the Arctic, and U.S. access to the Arctic must not be abridged. Another U.S. criticism is that the cost of the submarines could have a detrimental impact upon Canada's future conventional force posture. Moreover, Americans argue, the resources allocated for the submarine program could have a more positive impact upon deterrence and defensive capabilities if they were applied toward rebuilding Canada's deteriorated conventional forces in both NORAD and NATO.[118] In view of Canada's historically low military expenditures, the U.S. shares the concern that the financial commitment to the submarine program could, in effect, doom other Canadian forces to mediocrity. Furthermore, a future consequence of the program might be that "other Canadian governments perhaps less committed to defense than the Mulroney government will use the high cost of 'sovereignty protection' as an excuse for hollowing out the Canadian contribution to Europe."[119]

The bottom line of U.S. concerns about the Canadian submarine program has probably been best summed up by Charles Doran as follows:

> The United States, Japan and Canada's European allies fear that Canada is confusing sovereignty with security. Security for North America they believe, begins on the Elbe, not on the St. Lawrence. Moreover, the 'opportunity costs' for this type of expenditure are very high. Real security,

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[118]"Canada Plans A Military Buildup in Arctic; Sensing A U.S. Threat to its Sovereignty, Ottawa May Buy Nuclear Submarines," *Washington Post*, 14 May 1987, sec. A, 35

[119]Charles F. Doran "Canadian Relations With the United States," *Current History*, 527 (March 1988): 100.

security of the type that will strengthen the conventional deterrent in Europe through an enlarged Canadian presence, or security that in some way will help enhance the capacity to extend deterrence to Europe, would require a quite different commitment.[120]

A final reported concern of the U.S. is the prospect of Canada having a nuclear accident that could have a detrimental impact upon the nuclear power programs of the United States. It is reportedly feared that an accident in Canada could strengthen anti-nuclear sentiments in the U.S and undermine support for the U.S. nuclear submarine program. Captain Robert Hofford, Naval Attaché at the U.S. Embassy in Ottawa, stated in Ottawa at a conference on the Canadian defense industry that, if an accident should happen, "we can't wipe our hands of the Canadian program."[121]

The Soviets have expressed a more cautious reaction to the announced nuclear submarine plan. In an October 1987 speech at Murmansk, Soviet General Secretary Mikhail Gorbachev unveiled his proposal for developing what he called an "Arctic Zone of Peace." Specifically, he called upon both Arctic and Nordic countries to join with the Soviet Union in making the region a Nuclear Weapon Free Zone (NWFZ), a Demilitarized Zone (DMZ), and a region for scientific, environmental and developmental research co-operation.[122] Since 1958, the Soviets have continued to demonstrate an interest in Nordic arms control measures; but the geographic scope of this interest had remained centered upon the Northern European countries, without including a significant portion of the Circumpolar region. While arms

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[120]Ibid.

[121]Hofford cited in Silverberg, 35.

[122]Cleve Archer, "Russia's Arctic Dimension," *World Today* 44, March 1988, 47.

control proposals for the latter region have been common since 1964, they have been left under the auspices of the various countries within the region and the Soviets have shown very little interest.[123]

Although Gorbachev's proposals did not address security issues in the Circumpolar Region per se, they did set the stage for proposals in this region that would shortly follow. In talks in Oslo and Stockholm, Soviet Premier Nikolai Ryzhkov called for reducing NATO and Warsaw Pact exercises in the Arctic to once every two years and a limitation on Soviet and U.S. submarine activity in the Arctic. Alexei Makarov, first counselor at the Soviet Embassy in Ottawa, said in a press conference, that:

> ...[Ryzhkov's] plan would enable Canada to scale down its own militarization of the north, including ending approval of U.S. cruise missile testing over the Northwest Territories as well as cancelling the purchase of the submarine fleet.[124]

It is obvious from the timing of the Soviet proposal that Canada's proposed submarine plan has gained the interest of the Soviets. Canada's Defence Minister Perrin Beaty, cognizant of prior Soviet unwillingness to include the Kola Peninsula (discussed in the next chapter) in any negotiations, stated that "the Soviet proposal is unacceptable if it does not specifically include the huge Soviet military installation on the Kola Peninsula."[125]

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[123]Ronald G. Purver, "Arctic Arms Control: Constrains and Opportunities," *Canadian Institute For International Peace* 3, February 1988. 37-38.

[124]Makarov cited in David R. Francis, "Canada Gives Cautious Reception to Soviet Arctic Proposals," *The Christian Science Monitor*, 19 February 1987, 9.

[125]Beaty cited in Francis, "Canada gives cautious reception to Soviet Arctic proposals," 9.

V. THE STRATEGIC SIGNIFICANCE OF THE ARCTIC

During the past 30 years, the Arctic region has taken on new strategic significance. Jan Breemer's description of this region gives one an appreciation for the environmental complexities that the Arctic presents to the NATO allies in countering the ever increasing threat posed by Soviet submarines.

> The Arctic Ocean is the world's fourth largest ocean. With a total area of more than 14 million square kilometers, it is nearly six times as large as the Mediterranean Sea and more than seven times the size of the Caribbean Sea. About 40 percent of the Arctic is permanently covered with a multi-year ice pack; its thickness varies, on the average, from eight to 16 feet at the end of winter, to five to 10 feet at the close of summer, In some places, thickness measures nearly 200 feet, but in others it can be only a few inches.[126]

Clearly, the Arctic poses a formidable challenge to mariners. From this vast, inhospitable ice-laden region, Soviet submarines can hide and strike targets anywhere within the North American continent. While it is obvious that current U.S. interests in the Arctic include being able to respond to this threat, a look back at the United States' activities within this region will illustrate how U.S. interests have evolved.

A. U.S. INTEREST

The United States' interest in the Arctic region prior to the late 1950s was principally inspired by American adventurism and scientific exploration.

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[126]Jan Breemer, "Ice Wars: Battle Beneath the North Pole-Tomorrow's Cold War," *International Combat Arms*, July 1988, 78.

The first American expedition into the Arctic region came in 1850 with the failed attempt of U.S. Navy Lieutenant Edwin Jesse De Havin to locate the lost British expedition commander Sir John Franklin.[127] As a result of the publicity Lieutenant De Haven's expedition received and, most probably, because the frontiers of the U.S. were running out, adventurers came to view the Arctic region as the new frontier. Between of 1850 and 1909, when Commodore Perry discovered the North Pole, dozens of Americans led expeditions that explored the vast Arctic region.[128]

By the 1930s, most of the surface of this vast region had been explored by some combination of air or surface exploration. Nevertheless, one frontier in the Arctic still remained: that of the subsurface. The rapid advances in submarine technology had now made this venture possible. The first attempt at conquering the Arctic subsurface was made by Sir Hubert Wilkins, an Australian, aboard the former U.S. Navy submarine *Nautilus.* Although this attempt failed as a result of equipment malfunction, it nevertheless sowed the seeds for a new era of Arctic exploration.

Success in conquering the Arctic subsurface was not finally achieved until 1958, when the *USS Nautilus (SSN-571)*, the first U.S. nuclear powered submarine, circumnavigated the Arctic Ocean. "This cruise demonstrated the feasibility of a new submerged sea route that reduced the distance from

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[127]Dean C. Allard, "To the North Pole," *Proceedings*, September 1987, 56.

[128]Ibid., 60-63.

London to Tokyo by 4,700 miles."[129] Moreover, the *Nautilus'* accomplishments would give the Arctic region new strategic importance with the advent of the submarine launched ballistic missile (SLBM).

U.S. scientific efforts in the Arctic have primarily focused on the study of weather and other environmental factors. These studies have provided a wealth of information that has served both commercial and naval interests. Commercially, the Alaskan fishing and oil industries have reaped huge benefits from this ongoing research. From a naval prospective, naval operations in the Arctic would be severely handicapped if it were not for research into ice movement, ice thickness, and the characteristics of the Arctic waters for ASW purposes.[130]

While U.S. interests in the Arctic began with humanitarian and scientific efforts, today it is of paramount importance that the U.S. maintain a credible presence in the Arctic region. U.S. nuclear-powered submarines have become the mainstay of U.S. military and scientific activity in the Arctic region.[131] For security reasons, the U.S. cannot and, it may be hoped, will not let its access to this region be constrained in a way that would damage Western security interests.

B. CANADIAN INTEREST

While a large portion of the open discussion in Canada has focused upon the sovereignty issue in the Arctic archipelago, some Canadians look beyond

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[129]Ibid., 65.

[130]Breemer, 77.

[131]Norman Polmar, "Sailing Under the Ice," *Proceedings*, June 1984, 121.

this issue and view the real threat to Canada as coming from the Soviet presence in the circumpolar region. U.S. and Canadian interests converge on this very important issue. For unknown reasons, some Canadians have chosen to publicly play down the actual threat posed by the Soviets in the Canadian domestic debates pertaining to the proposed acquisition of the SSNs. As an example, in the 1987 White Paper, an 87 page report, less than three pages of text were devoted to the threat posed by the Soviet Union. However, whether it is an oversight or a deliberate attempt not to cause alarm, Canada's geopolitical position makes Canada prominent within Soviet military strategy.

Canada's involvement in collective security, its geographic location, and its economic ties with the United States and other allies make its involvement unavoidable in a confrontation between East and West. While the Canadian forces in Europe are small, the country's economic infrastructure poses a threat to the Soviet Union. Because of the potential of Canada mobilizing its economy to support the West in a conflict, Canada is vulnerable to Soviet attack in a protracted war. Therefore, it could make sense, in a conventional war, for the Soviets to launch attacks against Canada's war making potential.

Soviet attacks against Canada would probably include ALCMs and SLCMs. While there is some margin of defense against bomber-delivered ALCMs with the DEW and NWS warning systems, currently Canada possesses no defense against SLCMs launched from points not covered by these warning systems. As Commander Haydon points out, Canada and some parts of the United States could be targeted with Soviet SS-X-21 and possibly SS-NX-24 SLCMs. These missiles are believed to have ranges of 3,000 km and

1,600 km respectively.[132] These may in fact be conservative estimates of SLCM ranges when one considers the rapid advances in Soviet weapon technology.

Using these ranges Commander Peter Haydon has theorized possible launch positions for these missiles and the targets that would be acquired. The assumption made in this analysis is that the Soviets could launch their missiles in water that is less than 50 percent covered by ice.[133] Table 5.1 summarizes these possible launch positions and their possible targets. These launch positions in the Arctic archipelago provide the Soviets with deep water close to North America. This obviously complicates allied ASW problems.

As pointed out by John Honderich, another potential threat to Canada posed by the Soviets in a protracted nuclear war resided in the possibility that:

> ...the Soviets might well dispatch commando-type units to land in the Arctic. Their purpose would be to sabotage pipelines or act as a diversion to keep some Canadian and U.S. resources focused on the North, instead of elsewhere.[134]

Because more than 70 percent of the Canadian population lives along the border with the United States, Soviet nuclear attacks could threaten Canada's population both directly and indirectly. Therefore, Canadian defense planners share many of the same concerns as the United States about

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[132]Peter T. Haydon, "The Strategic Importance of the Arctic: Understanding the Military Issues," *Canadian Defence Quarterly*, Spring 1988, 29.

[133]Ibid., 29.

[134]John Honderich, *Arctic Imperative: Is Canada Losing the North?* (Toronto: University of Toronto Press, 1987), 90.

TABLE 5.1. POSSIBLE SOVIET CRUISE MISSILE LAUNCH POSITIONS[135]

	AREA	WATER DEPTH	ICE COVER	TARGETS WITHIN THEORETICAL RANGES OF 1600 KM	3000 KM	ASSESSMENT
A	Amundsen Gulf	300 m	Over 5/10th except July thru Sept.	NWS sites and CF-18 FOBS	Major cities between Calgary and Winnipeg	Limited potential except during summer or it the C. Bathurst polyna is open.
B	McClure Strait	400 m	Over 5/10ths all year	NWS sites and CF-18 FOBs	Major cities between Calgary and Thunder Bay.	Unusable because of ice cover.
C	McClintock Channel	50 m	Over 5/10ths all year	NWS sites and CF-18 FOBS	Major cities between Calgary and North Bay as well as parts of the northern Mid-West of the USA	Unusable because of ice cover.
D	Gulf of Boothia	200 m	Over 5/10ths except July thru Sept.	NWS sites and CF-18 FOBS.	Most major areas north of a line through Chicago	Good potential during summer, but difficult entry
E	Lancaster Sound	700 m	Over 5/10ths except July thru Sept.	NWS sites and CF-18 FOBS.	Major cities between Calgary and winnipeg and north of the line from winnipeg to Quebec City.	Unusable to the southeast because of mountains on Baffin Island
F	Smith Sound'	500 m	As for Lancaster Sound	As for Lancaster Sound	Nor major Population centres.	Only of very limited tactical value
G	Davis Strait Labrador Sea	500 m	Less than 5/10 ths all year	Same NWS sites	Most eastern cities and areas north of New york	Ideal location for a year round patrol area
H	Approaches to Hudson Bay	500 m	Over 5/10ths except July thru Sept.	NWS sites and CF-18 FOBs.	Extensive in the NE part of the continent	Good summer position reached from either Arctic or the Atlantic.
	Hudson Strait	200 m	As for approaches to Hudson Bay	As for approaches to Hudson Bay.	Extensive in the East and central Canada and USA.	Good summer position

[135] Haydon, "The Strategic Importance of the Artic," 31.

the Soviet threat from the circumpolar region. Despite the rhetoric about sovereignty in the Arctic archipelago, Soviet attacks on either Canada or the U.S. would most assuredly have an adverse effect upon the other.

Because of these concerns and those pointed out below, informed Canadians share the same concerns about the Arctic as does the United States. Therefore, the principal threat to Canada's sovereignty and security lies with the Soviets and not with the United States.

C. SOVIET INTEREST

Russia's interest in the Arctic came as a result of its proximity to the region. Recorded Russian history shows that explorers first reached the Kola Peninsula in the ninth century. During the following two centuries, Russian fur traders made inroads into the regions adjoining the Barents and White Seas. Although the Arctic possessed great economic potential, the harsh weather conditions precluded militarization of the region until well into the 20th century, when technology had advanced to the point that the inhospitable climate conditions could serve as a Soviet advantage.[136] The nuclear submarine, the submarine-launched ballistic missile, and the intercontinental bomber are three of the key advances that have given the Soviets a war-fighting capability in the Arctic region.

Today, the Arctic is believed to be one of four Soviet maritime Theaters of Military Operations (TVD). This TVD not only encompasses the Arctic Basin but also includes the Norwegian Sea, Greenland Sea, Baffin Bay, and the

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[136]Charles C. Petersen, *Soviet Military Objectives in the Arctic Theater and How They Might be Attained.* (Alexandria, Va.: Center for Naval Analyses, 1986.) DTIC, AD-A175359. 1.

Hudson Bay.[137] The fleet responsible for military action in this TVD is the Northern Fleet. In addition to its surface and subsurface assets, the Northern Fleet "has its own naval aviation, naval infantry, coastal defense, and special warfare (spetsnaz) components."[138]

Former Secretary of the Navy John Lehman has called the Kola Peninsula, where the greater part of this fleet is based, "...the most valuable piece of real estate on earth."[139] The Soviet naval complex on the Kola Peninsula is one of the largest installations of its kind in the world.[140] Norman Polmar describes the Northern Fleet's assets as follows:

> Today the Northern Fleet has almost 50 percent of the Soviet Navy's submarines, some 26 percent of the surface warships (frigates and larger units), about 27 percent of the naval aircraft, and 26 percent of naval personnel ...The Northern and Pacific fleets share all of the navy's nuclear submarines and ballistic missile submarines (except for the six Golf-class SSBs assigned to the Baltic Fleet and the Golf V missile trials submarine in the Black Sea Fleet).[141]

The Northern Fleet is the largest of the three European fleets—Northern, Baltic, and Black Sea—and assumes several other important roles besides naval operations in the Arctic region. Because it has a more direct access to

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[137]Norman Polmar, *Guide to the Soviet Navy*, (Annapolis: United States Naval Institute Press, 1986), 17.

[138]Ibid.

[139]Lehman cited in Leonard A. LeSchack, "ComNavForArctic," *Proceedings*, September 1987, 74.

[140]Simon Ollivant, *Conflict Studies 172: Arctic Challenge to NATO* (London: The Institute for the Study of Conflict, 1984), p. 3.

[141]Polmar, *Guide to the Soviet Navy*, 19.

the Atlantic Ocean than the two other European fleets, the Northern Fleet is charged with the responsibility of providing for naval operations in the Atlantic. Moreover, as a result of the 1936 Montreux Convention, which restricted submarine transits between the Black Sea and the Mediterranean, the Northern fleet provides submarines for operations in the Mediterranean.[142]

It is reported that the Soviets believe that in order to gain control of the seas in a particular area, control must first be obtained of the surrounding air and land. From this line of reasoning, it follows that the Soviets believe that events occurring ashore will have a great impact upon the events at sea.[143] If the Soviets do in fact believe this, the possible implications are that during a time of hostilities, the amphibious components of the Northern Fleet will probably take immediate actions against Norway, Iceland and the North Sea approaches to the Danish Straits in paving the way for their projected victory at sea.[144]

While there is general agreement among Western naval analysts about the likelihood of the Soviet Union taking action against the above land masses in securing its flanks, analysts disagree as to how the Soviets might employ the Northern Fleet's SSNs and SSBNs. As a result, two divergent hypotheses have evolved. It is now widely accepted throughout the U.S. Navy that, if hostilities were to break out, the Soviets would keep the bulk of these

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[142]Ibid.

[143]Petersen, 4.

[144]Polmar, *Guide to the Soviet Navy*, 19.

assets in "bastions" near the Soviet Union. From within these bastions, the Soviets could provide defense in depth for their SSBNs and at the same time provide for the protection of the homeland against seaborne attack.[145] The U.S. Navy's Maritime Strategy states that roles such as interdiction of NATO's sea lines of communication (SLOCs) and supporting the army will be a secondary priority for the Soviet navy.[146]

Conversely, there are naval analysts who find the bastion theory overly optimistic, partly because of the opportunities it might offer to allied ASW forces. Jan Breemer asserts that:

> First of all, it [a bastion deployment] would tie up a very large percentage of Soviet fleet assets perhaps needed elsewhere. Second, the biggest problem in ASW is finding the opponent's submarines. Although the bastion seas encompass large bodies of water, with plenty of room to hide, they offer a very distinct "carrot" for Western ASW forces, especially nuclear attack submarines.[147]

Professor Breemer believes that these considerations have had a major impact upon the Soviet decision to send their SSBNs to hide underneath the Arctic ice for protection.[148] According to Commander J. J. Tritten:

> If bastion defense were the sole mission for Soviet general purpose forces, there would not need to be the current surplus of submarines that exceed any logical possible defense requirement....Bastion defense baits the West to fight on Soviet turf and terms.[149]

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[145]James D. Watkins, "The Maritime Strategy," *Proceedings*, January 1986, p.7.

[146]Ibid.

[147]Breemer, 76.

[148]Ibid.

[149]Tritten, 208.

In support of the Northern Fleet conducting a SLOCs campaign, Commander Tritten states that "there is no question from the manifest and extremely strong latent evidence that the SLOCs mission exists no matter the conditions of war (nuclear or conventional)."[150] While Admiral Studeman supports the bastion theory, he also adds further credibility to a Soviet SLOC campaign:

> SLOCs outside the sea denial perimeter will initially be threatened by relatively few forces, so long as higher priority CVBGs and other nuclear capable units constitute a threat or until resupply SLOCs become of strategic importance to the outcome of the conflict. It the Soviets calculated that their strategic mission could be fulfilled with fewer submarine and air assets, or if NATO's reinforcement/resupply effort during pre-hostilities warrants an intensified anti-SLOC campaign at the outset of war, the Soviets could assign more assets to SLOC interdiction from the outset of hostilities..."[151]

Although it is beyond the scope of this thesis to ascertain which course of action the Soviets might be more likely to pursue in the event of war, it is clear that if "such predictions should include considerations of hardware, deployments, and exercises,"[152] the Soviets have hedged against anyone predicting their precise intentions. Not only do Soviet submarines operate in the most Northern fringes of the Arctic; but they also have operated off the coast of the United States and Canada and the approaches to and within the Mediterranean. As Table 5.1 depicts, missiles carried aboard Soviet SSNs and SSBNs pose a formidable threat to all NATO countries.

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[150]Ibid., 210.

[151]Admiral William O. Studeman, *Before the Seapower and Strategic and Critical Issues*, 1 March 1988, 12.

[152]Tritten, 41-65.

It is believed that 22 Delta Class and four Typhoon Class SSBNs are assigned to the Northern Fleet.[153] From concealed hiding places under the Arctic ice, these SSBNs can strike any target within North America, or for that matter NATO, with a high probability of not being detected. (See Table 5.2, for ranges.) Once Soviet SSBNs enter the Arctic, they are no longer exposed to the threat of U.S. air or surface ASW. Not only are allied ASW efforts complicated, but it is unlikely that the Soviets would send these valuable assets underneath the ice without the protection of some SSNs. Moreover, the ability of the Western allies to detect Soviet submarines may be greatly reduced because of the Arctic temperatures. Sound is the principal sensor medium of a submerged submarine and the temperature, as well as the pressure and salinity, of the water is one of the determinants of the velocity at which sound will travel. Varying temperatures of the water cause a sound wave to refract, making it more difficult to detect. The various thermal gradients of water can cause ducting (or trapping) of the sound wave at particular depths. Therefore, to compensate for these disadvantages, more allied SSNs will be needed for operations against Soviet SSNs and SSBNs in the Arctic.

Whether or not these SSBNs would be withheld for escalation control, intra-war deterrence or war termination can not be determined.

To make matters worse, it is believed that the Soviets have developed the capability to fire their missiles through the Arctic ice. This is reportedly

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[153]Polmar, *Guide to the Soviet Navy*, 5.

TABLE 5.2. SOVIET SSNS/SSBNS WEAPONS SYSTEMS[154]

SOVIET BALLISTIC MISSILE SUBMARINES			
PLATFORM	**MISSILE**	**WARHEADS**	**RANGE**
Yankee Class*			
Yankee I	SS-N-6	MOD I One MOD II One	2,400 KM 3,000 KM
Yankee II	SS-N-17	MOD I One	3,900 KM
Delta Class			
Delta I	SS-N-8	MOD I One MOD II One	7,800 KM 9,100 KM
Delta II	SS-N-8	MOD I One MOD II One	7,800 KM 9,100 KM
Delta III	SS-N-18	MOD I Three MOD II One MOD III Seven	6,500 KM 8,000 KM 6,500 KM
Delta IV	SS-N-23	Ten	8,300 KM
Typhoon Class			
Typoon 3,000 KM.	SS-N-20	Six-Nine	8,300 KM
*Special configured Yankees can also carry the SS-NX-21 long range cruise missile. This missile's range is approximately 3,000 KM.			

[154]U.S. Department of Defense, *Soviet Military Power 1987*, (Washington, D.C.: Government Printing Office, 1987), 33-38.

accomplished by "hardware, mounted on the submarine, that breaks through several feet of ice above the submarine just prior to the missile launch."[155]

Other technological advances are making operations in the region even more attractive. Such advances include Extremely Low Frequency (ELF) communications that have the "potential of providing world wide coverage at any submarine depth,"[156] satellite navigation fixes, and prepositioned "landmarks" on the seafloor that can provide the Soviets with targeting and navigation information without the aid of satellites.[157]

The U.S. cannot let the Soviet Union's build-up of its Northern Fleet go unchallenged. To date, Canada has done little in countering the Soviet challenge in the Arctic. If the U.S. failed to take defensive actions in the Arctic, it would basically become a Soviet lake from which the Soviets could hold North America in its entirety as a hostage. For this reason, the U.S. has an overriding security interest in the Arctic.

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[155]Craig Covault, "Soviet Ability to Fire Through Ice Creates New SLBM Basing Mode," *Aviation Week & Space Technology*, 10 December 1984, 16.

[156]Ibid.,28.

[157]Ollivant, *Conflict Studies 172: Arctic Challenges to Nato*, 4.

VI. CONCLUSION AND RECOMMENDATIONS

The Royal Canadian Navy's development patterns can be compared to the floods and ebbs of the ocean tides. Canada demonstrated in World War II that when the peace of the world is threatened and when time permits, it is quite capable of assembling forces that can make a significant contribution to the security of the free world. However, since World War II, weaponry and warfare have evolved to the point that technology no longer affords a country the opportunity to rearm when confronted with a menacing situation. Therefore, a continued state of readiness must be maintained to provide for security.

According to some Canadian officials and experts (cited in Chapter II), Canada's armed forces are today incapable of meeting their obligations under the various bilateral and multilateral agreements forged during and after World War II. This sad state of affairs can be attributed to the Canadian government's low level of spending on the armed forces. Among the 16 NATO countries, Canada holds the position of fourteenth in military expenditures. As a result, Canada has in recent decades settled for a naval force comparable to that of some Third World countries.

Prime Minister Mulroney came to power in 1984 bent upon improving Canada's military posture. Although it took three years to formulate its defense policy paper, the Mulroney government has called for improvements throughout the Canadian armed forces. Of prime naval importance is the proposed procurement of 10 to 12 nuclear powered submarines at a cost of 8 billion dollars (Canadian) over 15 years. In view of Canada's historic austerity in military expenditures, the proposed submarine plan is indeed an ambitious

effort and accordingly, has drawn much criticism from the Canadian citizenry, primarily because of the cost.

External criticism of Canada's submarine plan has principally come from the United States, whose foremost concern is the intended use of the submarines. Instead of the defense build-up being championed as Canada's attempt to become a "team player" within NATO, some Canadians have implied that the SSNs could serve as a means of enforcing Canada's sovereignty vis-á-vis the U.S. in the Arctic.

The issue of Canadian sovereignty in the Arctic has become a problem in the friendly relations between Canada and the United States. Although it is very questionable whether Canada can legally claim sovereignty over the international waters in the region, it appears that Canadian policies could hamper U.S. naval operations within the Arctic.

Although its origin goes back more than a hundred years, the issue of U.S. encroachment upon Canadian sovereignty in the Arctic has been a recurring theme since the 1969 transit of the *Manhattan*. This issue appears to have reached new intensity after the 1985 transit of the U.S. Coast Guard icebreaker *Polar Sea (WAGB-11)*. Because previous passages of U.S. ships did not receive the magnitude of publicity that the *Polar Sea's* transit received and because of the two British Royal Navy submarines believed to have transited the Arctic archipelago in May 1988, without much publicity, some Canadians may be attempting to use the issue of sovereignty as a means of building nationalism that will aid in securing approval for the proposed defense spending plan.[158]

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[158]*Toronto Globe and Mail*, 31 May 1988, Al. Cited in the Contre for Foreign Policy Students, Department of Political Sciences. Dalhousie University, *Defense Newsletter* 7, May 1988, 9.

If, in fact, the issue of sovereignty is being used as a vehicle in furthering their naval aspirations, the Canadians must be mindful of the mixed signals they are sending to the world. On the one hand, Canada is calling for an enhanced NATO posture; on the other hand, it is telling the Soviets that the Western consensus on collective defense, the foundation of NATO, is beginning to deteriorate. This dichotomous message could lead the Soviets to conclude that there is friction within the NATO alliance.

While it may be in vogue to utilize the U.S. for domestic political purposed in Canada, the U.S. remains the backbone of the Atlantic Alliance and must be accorded the opportunity to fulfill its naval responsibilities. Without the full participation of the United States, NATO would become an assortment of middle powers whose collective naval strength would not even match that of the Soviet Northern Fleet. Moreover, the continued condemnation of the United States' naval operations in the Arctic by some Canadians "fans the fires" of a growing U.S. domestic call for a retrenchment of U.S. forces.

If the U.S. were to relent on insisting on its right to passage in the Arctic, it could have worldwide implications. The U.S. Navy has become the right arm of U.S. foreign policy and deterrence strategy. To accomplish its responsibilities, the U.S. Navy must have unimpeded passage throughout the world's oceans. Should the U.S. set a precedent by negotiating its rights of passage in the Arctic, other countries throughout the world would soon demand similar concessions.[159]

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[159]Jonathan Manthorpe, "U.S. Denies Canada's Waterway Sovereignty" *Defense News,* 18 January 1988, 27.

While the issue of Canada's sovereignty over the Arctic archipelago remains unresolved, it would appear that the two governments could determine a workable provisional solution.

In January 1988, the U.S. and Canada signed the Arctic Cooperation Agreement. This agreement acknowledged that both governments have a shared interest in the Arctic region and called for their combined efforts in matters of navigation and resource development. It further states that, "the United States pledges that all navigation by U.S. icebreakers within waters claimed by Canada to be internal will be undertaken with the consent of Canada."[160] In essence, this agreement states that the U.S. will seek Canada's permission before sending Coast Guard icebreakers through the Northwest Passage. The agreement does not cover the passage of submarines, however, In the interests of a united, cohesive front in the face of the Soviet threat, Canada should take this agreement as a victory on the sovereignty issue.

John Lamb, a spokesman for The Canadian Centre for Arms Control and Disarmament, has stated that "It is a naive assumption that Canadian submarines could compel the U.S. Navy to respect Canada's Arctic claims." Instead Lamb said the acquisition of the submarines, "could result in a closer and closer Canadian integration, as a junior partner, in U.S. naval operations in the North."[161]

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[160]*Agreement between the United States and Canada on Cooperation in the Arctic region.* January 1988.

[161]Cited in the *TorontoGlobe and Mail*, 11 May 88, A4. Cited in the Contre for Foreign Policy Students, Department of Political Sciences. Dalhousie University, *Defense Newsletter* 7, May 1988, 17.

Although Canada's first nuclear-powered submarine is not scheduled for delivery until late 1996 and the program has formidable domestic obstacles to overcome, U.S. defense planners must assume that this plan may become reality and begin planning how the addition of 10 to 12 SSNs could best serve the needs of NATO.

Because of the continued Soviet build-up in the region and the threat that it poses to the security of North America, Captain LeSchack in his article, "ComNavForArctic," called for the establishment of a U.S. Navy Unified Command within the Arctic.[162] The author goes on to say that ComNavForArctic "would be the focus for all Navy, naval aviation, and Marine Corps operational, intelligence, and planning actions for any potential force projection in the Arctic theater."[163] An organization of this type would have merit; but a U.S.-only operational concept would have an adverse impact upon already somewhat strained U.S.—Canadian defense relations in the Arctic. This writer believes that a more plausible organization would be one formed along the lines of NORAD-a combination of U.S. assets with the assets of Canada. Canada might be inclined to put the sovereignty issue to rest if Canadian co-responsibility for security operations was firmly established and recognized.

For discussion purposes, this organization could be called the Unified Command Arctic Theater (UCAT). UCAT could be a way of alleviating Canada's concerns about sovereignty encroachment while, at the same time,

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[162]Lehman cited in Leonard A. LeSchack, "ComNavFor Arctic," *Proceedings*, September 1987, 74.

[163]Ibid.,75.

enhancing the security of North America and the Atlantic Alliance as a whole. In addition, it could be responsible for the joint planning and coordination of operations in the Arctic region that would best serve the interests of North America and the Atlantic Alliance as a whole. Moreover, this organization could better integrate Canada's proposed 10 to 12 nuclear submarines into NATO's maritime strategy in accomplishing its objectives of:

- Neutralizing Soviet Strategic Nuclear Submarines
- Safeguarding transatlantic sea lines
- Preventing the Warsaw Pact from gaining maritime superiority in the North Atlantic.[164]

Moreover, such an organization would enhance both the United States' and Canada's ability to patrol the Arctic region. The 14 million square kilometers of the Arctic provide ample area for both countries to make sizable contributions to the security of North America. Since Canada has already announced plans to establish a military facility at Manisivik, located on the Northern shore of Baffin Bay,[165] basing for this organization could be established, thereby reducing U.S. transit times to and from the Arctic region and increasing the SSNs' time on station before returning to homeport. The obvious benefit of this basing is that the Western presence in the Arctic would be increased, making it more difficult for Soviet submarines to avoid detection.

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[164]Michael N. Pocalyko, "Sinking Soviet SSBNs," *Proceedings*, October 1987, p.26.

[165]Jonathan Manthrope, "Canada Sets Base Near Northwest Passage," *Defense News*, 15 February 1988.

The U.S. currently has 37 Sturgeon (SSN-637) class submarines capable of operating under the Arctic ice. The SSN-637 class is rapidly reaching the age of retirement. Of the 67 new Los Angeles (SSN-688) class submarines currently in operation or being built, only 34 will be capable of operating under the Arctic ice.[166] The U.S. Navy had hoped to procure a new SSN-21 class submarine designed especially for under-the-ice operations; however, current budgetary considerations may delay procurement of the SSN-21 well into the next century. Moreover, during a time of crisis U.S. SSNs would be required for operations against other Soviet forces as well as to serve in the defense of U.S. SLOCs to Western Europe. Ten (10) to 12 Canadian SSNs should therefore be a welcome addition to collective security.

The benefit for Canada in joining UCAT is that the Canadians could receive advanced ASW technology and training from the United States. Because Canadian forces would be serving in a capacity that directly affects the security of the United States, it is possible that the U.S. might make available certain types of advanced technology for the detection of submarines. For example, the Defense Advanced Research Projects Agency (DARPA) is currently working with data relay satellites for linking small sensors on the ice pack with U.S. ground stations and submarines. It is expected that this sensor system will be able to "...take advantage of properties of the ice pack that are especially favorable for submarine detection."[167] While Canada's experience in operating under the ice is very limited, joint

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[166]Edward B. Atkeson, "Fighting Subs Under the Ice" *Proceedings*, September 1987, 83.

[167]Ibid.

operations with the U.S. would serve as a vehicle for teaching Canada the "tricks of the trade."

The Soviet threat from the Arctic is real and not imaginary. In the interests of security, Western nations must do all they can to deny the Soviets their objectives in this region. Unfortunately, dissension among the Western allies has continued, partly because of disagreements about how to assess and respond to Gorbachev's calls for reductions in forces and other measures relating to the Arctic.

APPENDIX A

CANADA'S ECONOMIC MEASUREMENTS AND EXPENDITURES[168]

CANADA						
YEAR	MEGNP	MECGE	MECAP	GNPCON	MECON	CGECON
1967	3.0	18.7	246.9	169167.2	5037.4	26968.7
1968	2.7	16.3	231.1	178950.6	1896.7	29347.6
1969	2.4	11.6	215.2	188567.9	1882.7	39045.6
1970	2.4	12.9	220	193387.8	2057.9	36350.6
1971	2.3	10.7	217.6	206750.5	2174.6	43783.5
1972	2.1	10.5	215.5	219244.7	2266.9	44749.8
1973	2.0	9.7	209.1	235756.7	2356.2	47408.1
1974	2.0	8.5	212.6	243820.1	2640.2	55886.8
1975	1.9	7.7	206.9	246505.3	2840.2	60978.8
1976	1.9	8.2	214.4	260462.5	3150.5	60464.0
1977	2.0	8.7	226.7	265554.2	3574.1	61036.4
1978	2.0	8.7	238.7	275079.3	4076.7	64491.6
1979	1.9	8.2	221.5	283174.6	4136.8	63941.3
1980	1.9	8.1	225.1	283027.1	4638.1	67015.0
1981	1.9	7.8	229.9	291765.7	5265.7	71988.7
1982	2.2	8.1	252.2	278873.6	6203.4	76213.9
1983	2.2	7.8	248.1	287239.9	6439.2	79381.0

[168]The data used in this chart was extracted from the program 'USACDA WMEAT DATA 1967-1983. 'Naval Postgraduate School's IBM 3033/4381. This data was extracted from the United States Arms Control and Disarmament Agency's yearly publication, *World Military Expenditures and Arms Transfers.* MEGNP and MECGE are in percentages. All other columns are in (U.S.) millions of dollars.

APPENDIX B

MILITARY EXPENDITURES OF NATO MEMBERS WITH A HIGH ECONOMIC CLASSIFICATION.[168]

	BELGIUM		DENMARK		FRANCE	
YEAR	MECON	MECGE	MECON	MECGE	MECON	MECGE
1967	1635.4	15.2	1030.6	10.9	16006	26.2
1968	1694.3	14.6	1107.9	10.7	16068.7	25.3
1969	1699.6	13.8	1057.2	9.8	15292.6	21.4
1970	1799.4	7.9	1021.5	7.1	15410.9	11.7
1971	1860.9	7.6	1097.3	7.2	15568.3	11.8
1972	1956.2	7.2	1066.7	6.8	15955.6	11.5
1973	2049.9	7.1	1004.0	6.4	16476	11.6
1974	2091.2	7.0	1127.8	6.5	16786.1	10.6
1975	2271.3	6.8	1189.8	6.7	17274.3	10.1
1976	2428.6	6.7	1177.8	6.5	17983.5	9.9
1977	2497.1	6.6	1208.6	6.4	19052.6	10.2
1978	2673.3	6.6	1252.1	6.3	20081.3	10.2
1979	2737.8	6.5	1452.6	6.9	20642.7	9.9
1980	2852.6	6.5	1340.3	6.0	21411.2	10.0
1981	2944.0	6.2	1365.9	5.7	22206.6	9.7
1982	2891.8	5.8	1400.5	5.5	22523	9.0
1983	2793.2	5.7	1421.9	4.5	22827.8	9.3

[168]The USACDA WMEAT Data base assign four general classifications to countries based on their per capita GNP: HIGH (GNPCAP>$5000), LOW (GNPCAP<$400), LOW MEDIUM (GNPCAP< $1600), and UPPER MEDIUM (GNPCAP<$5000). The countries used for comparison with Canada are all classified as high.

YEAR	LUXEMBOURG		NETHERLANDS		NORWAY	
	MECON	MECGE	MECON	MECGE	MECON	MECGE
1967	24.0	0.0	3272.7	8.7	1144.1	11.7
1968	20.6	0.0	3219.5	8.0	1201.7	11.9
1969	20.4	0.0	3396.2	8.0	1254.6	11.2
1970	19.6	2.5	3415.5	7.7	1233	10.3
1971	21.0	2.4	3537.8	7.2	1259.2	9.2
1972	23.3	2.4	3594.8	7.2	1285.3	8.4
1973	24.6	2.4	3638.4	6.9	1273.9	8.0
1974	24.6	2.3	3814.8	6.8	1298.2	7.8
1975	29.3	2.2	3975.0	6.5	1429.3	7.9
1976	30.6	2.2	3928.9	6.1	1472.4	7.0
1977	31.5	2.1	4384.9	6.6	1519.8	6.8
1978	33.5	2.2	4192.9	6.0	1649.6	7.1
1979	34.0	2.1	4447.9	6.1	1661.9	6.8
1980	39.1	2.4	4377.9	5.7	1627.8	6.7
1981	40.5	2.4	4469.7	5.6	1628.6	7.0
1982	41.4	2.3	4464.8	5.5	1697.6	7.2
1983	42.5	2.6	4483.8	5.5	1769.8	10.1

YEAR	UNITED STATES		UNITED KINGDOM		WEST GERMANY	
	MECON	MECGE	MECON	MECGE	MECON	MECGE
1967	199686.1	48.7	20617.7	18.6	18072.8	34.2
1968	203644.5	46.9	20305.4	17.0	16015.8	28.6
1969	195461.4	44.1	19007.4	16.0	17292.1	28.3
1970	177252.3	39.8	18802.8	13.5	16860.4	14.2
1971	161811.5	35.2	19815.9	13.7	17643.9	14.1
1972	160881.6	33.4	21180.8	14.1	18861.0	14.2
1973	153697.7	30.1	21321.8	13.7	19766.2	13.9
1974	154948.2	30.3	21952.7	12.5	20658.8	13.4
1975	155148.7	23.3	21483.9	11.3	20412.1	12.1
1976	142425.4	23.6	22236.5	11.9	20469.2	11.7
1977	149170.7	28.8	21663.5	12.2	20367.1	11.3
1978	150346.4	23.0	21841.6	11.7	21003.9	11.4
1979	155148.7	23.3	22499.1	11.7	21373.9	11.2
1980	167680.5	23.1	24123.1	12.1	21786.4	10.7
1981	180985.3	23.6	22710.4	11.5	22529.7	10.7
1982	196390.0	25.0	24169.3	11.6	22346.1	10.6
1983	208337.8	25.4	26330.5	13.2	22608.9	10.7

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